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1955-1958, Vols. 1-4, $5.00/volume

SOVIET SCIENCE AND TECHNOLOGY, 1958/59, VOL. 2, NOS. 1-12. A monthly guide to Soviet research. May 58-Feb 59, 10 nos.
Order from CB $25.00/year

v. II, no. 1, May 58, 66p.
v. 2, no. 2, June 58, 82p.
v. 2, no. 3, July 58, 68p.
v. 2, no. 4, Aug 58, 88p.
v. 2, no. 5, Sep 58, 56p.
v. 2, no. 6, Oct 58, 32p.
v. 2, no. 7, Nov 58, 38p.
v. 2, no. 8, Dec 58, 46p.
v. 2, no. 9-10, Jan 59, 38p.
v. 2, no. 11-12, Feb 59, 143p.

English table of contents of 1958 issues of all Soviet journals being translated into English on a continuing basis.

TRANSLATORS AND TRANSLATIONS: SERVICES AND SOURCES, ed. by Frances E. Kaiser. 1959 60p.
Order from Special Libraries Association, 31 East 10th St., New York 3, N. Y. $2.50

Part 1, Directory of Translators, lists the services, rates, languages, subject specialties, addresses, telephone numbers and other pertinent facts about 154 translators in the United States. Part 2, Pools of Translations, describes the size, scope, languages, subject fields and sources were indexed of 42 translation pools throughout the world. Part 3, Bibliographies of Translations, cites in detail 83 references to published bibliographies of translations. Extensive cross references from and to all three parts, two appendices and a detailed geographical-subject-language index to all three parts add to the usefulness of the volume.

Department of Scientific and Industrial Research (Gt. Brit.)
LLU TRANSLATIONS BULLETIN. June 59, 58p.
Order from HMSO $0.77, $9.88/year

New translations of Russian scientific and technical literature, recent additions to the Lending Library Unit loan collection of 15,000 individual translations and the translating activities of official and commercial organizations are regularly noted in the LLU TRANSLATIONS BULLETIN. In addition each issue includes several complete translations of Russian papers on such important topics as automation, education, machine translation, scientific research and new developments in China.

Library of Congress, Washington, D. C.
MONTHLY INDEX OF RUSSIAN ACCESSIONS.
July 59, 325p.
Order from GPO $12.00/year

This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the

title in the original language preceded by its English translation; Part B lists periodicals published after 1946, with their tables of contents translated into English; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

AGRICULTURE

Animal Husbandry

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology)
Order from OTS $1.00 each

Contents:
Section Q. Farm Animals.

No. 2, Abstracts 7116-7279, JPRS: 1155-N, 59-13069
No. 8, Abstracts 35584-35785, JPRS: 1251-N, 59-13196
No. 18, Abstracts 83255-83493, JPRS: 1712-N, 59-13651
No. 19, Abstracts 87991-88198, JPRS: 1666-N, 59-13592

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958; NO. 5 (Soviet Abstracts. Biology). 27 Apr 59, 20p. JPRS: 1517-N.
Order from OTS $1.00 59-13471

Contents:
Section R. Diseases of Farm Animals. Abstracts 16898-16959.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

THROUGH THE SOVIET UNION (Po Sovetskomu Soyuzu). 16 Apr 59, 7p. Trans. V1420.
Order from LC or SLA mi$1.80, ph$1.80 59-16152

Trans. of Veterinariya (USSR) 1959, v. 36, no. 3, p. 94-95.

The activities in 1959 of various groups associated with veterinary medicine and animal husbandry in the USSR are briefly summarized.

THE USE OF INSULIN AGAINST VENTRICLE ATONY AND FODDER INTOXICATION IN CATTLE [1959] 1p.
Order from LC or SLA mi$1.80, ph$1.80 59-15395

Trans. from Veterinariya (USSR) 1958, v. 35, no. 9.

The administration of insulin alone or in combination with glucose resulted in a 100% recovery in the 278 cases reported. There were no side effects.

Breyev, K. A.
BEHAVIOUR OF BLOOD-SUCKING DIPTERA AND BOTFLIES ATTACKING THE REINDEER AND THE RESPONSE REACTIONS OF REINDEERS (O Povedeni Krovososushchikh Dvukrylykh i Ovodov pri Napadenii ikh na Severnogo Olenya i Otvetnykh Reaktsiyakh Oleney), tr. by M. Slade. 19 Sep 56 [52]p. (4 illus. omitted) 14 refs. Trans. no. 3019.
Order from LC or SLA mi$3.60, ph$9.30 59-15042

Trans. of Parazitologicheskiy Sbornik (USSR) 1950, v. 12, p. 167-198.

The results of visual counts of mosquitoes, midges, deerflies and botflies on the bodies of reindeer in the experimental herd of the Institute of Arctic Agriculture and in a herd on the Malaya Zemlya tundra are reported. The insects' flight patterns, reactions to light and shade, and their ability to distinguish parts of the reindeer anatomy are analyzed. Tentless pasturing is recommended, accompanied by systematic extermination of botflies.

Lyubashenko, S. Ya., Tyul'panova, A. Ye. and Grishin, V. M.
AUJESZKY'S DISEASE IN MINKS, POLAR FOXES AND SILVERBLACK FOXES (Bolezn' Aueski u Norok, Pestsov i Serebristo-chernykh Lisits). 30 Jan 59, 11p. Trans. V1376.
Order from LC or SLA mi$2.40, ph$3.30 59-14230

Trans. of Veterinariya (USSR) 1958, v. 35, no. 8, p. 37-41.

The clinical aspects of 2 outbreaks of pseudorables among mink, polar and silver-black fox in 1956 and 1957 are described. The diagnosis was confirmed by autopsy and by subcutaneous and intramuscular injection of various test animals with suspensions of infected tissue of liver, spleen and brain. Source of the disease is stated to have been meat waste products obtained from combines after the slaughter of infected swine.

Obenko, K. S.
TISSUE PREPARATES FOR REARING OF SUCKLING PIGS. [1959] 2p.
Order from LC or SLA mi$1.80, ph$1.80 59-15390

Trans. of Veterinariya (USSR) 1958 [v. 35] no. 7, p. 86-87.

The spleen, liver or brain of healthy pigs killed at ages 40 to 55 days was administered subcutaneously in a physiological solution to 9 litters of piglets.

Animals of the experimental group had a better appetite, higher Hb and RBC count than the controls at the end of 30 days. The brain preparation was the most effective.

Syurin, V. N.
TEST RESULTS OF THE WIDE APPLICATION OF THE VIRUS-VACCINE FROM THE VACCINAL STRAIN B_1 AGAINST AVIAN PSEUDOPLAGUE (Itogi Ispytaniya i Shirokogo Primeneniya Virus-vaktsiny Protive Psevdochumy Ptits Is Vaktsinnogo Shtamma B_1). 22 Jan 59, 23p. Trans. V1369.
Order from LC or SLA mi$2.70, ph$4.80 59-14223

Trans. of Veterinariya (USSR) 1958, v. 35, no. 7, p. 37-46.

Dry virus vaccine B_1 derived from naturally attenuated strains of Newcastle virus was obtained by the State Scientific Control Institute of Veterinary Preparations in 1956. Following tests, the results of which are presented in tables, manufacture was initiated in the USSR. 10 million doses were administered under experimental and field conditions by the end of 1957. On the basis of these tests, the Main Veterinary Administration of the USSR Ministry of Agriculture has elaborated instructions for the routine application of the dry virus-vaccine.

Plant Cultivation

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 5 (Soviet Abstracts. Biology). 8 May 59, 21p. JPRS: 1570-N.
Order from OTS $1.00 59-13504

Contents:
Section O. Plant Diseases: Abstracts 20647-20718.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 16 (Soviet Abstracts. Biology). 11 June 59, 40p. JPRS: 1659-N.
Order from OTS $1.00 59-13587

Contents:
Section K. Forestry. Abstracts 72761-72837.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 21 (Soviet Abstracts. Biology). 15 June 59, 67p. JPRS: 1685-N.
Order from OTS $1.00 59-13613

Contents:
Section J. Soil Science. Abstracts 95668-95796.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, 1959 (Soviet Abstracts. Biology)
Order from OTS $1.00 each

Contents:
Section I. Plant Physiology.

1958, no. 22, Abstracts 99893-99959, JPRS: 1627-N, 59-13557
1958, no. 23, Abstracts 104325-104399, JPRS: 1674-N, 59-13601
1959, no. 1, Abstracts 1252-1304, JPRS: 1673-N, 59-13600

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Gaumann, Ernst and Jaag, Otto.
THE PHYSIOLOGICAL BASIS OF WILT CAUSED BY PARASITES. II. (Die Physiologischen Grundlagen des Parasitogenen Welkens. II). [1959] 25p. (7 illus. omitted) 7 refs.
Order from SLA mi$2.70, ph$4.80 59-15455

Trans. of Schweizerische Botanische Gesellschaft. Berichte (Switzerland) 1947, v. 57, p. 132-148.

The antibiotic patulin (clavacin, claviformin, expansin, tercinin), is a specific wilt toxin for higher plants, as is lycomarasmin, the specific wilting agent for Fusarium lycopersici Sacc., the cause of infectious tomato wilt. Its poisonous action is induced quantitatively in a similar manner to that of lycomarasmin; qualitatively, however, the symptoms of the injury are somewhat different, since it seems that patulin injury primarily the vascular bundle parenchyma, the phloem, and the cortex tissues of the stem and leaf petiole, whereas lycomarasmin has its principle effect in the cells of the leaf blade. With respect to the mechanism of the toxic action, patulin agrees largely with lycomarasmin, in that, at a concentration of 10^{-2} and 10^{-3} mol it damages the semi-permeability of plasma membranes and water holding power of the protoplasts, and therefore cause a pathological wilt and a pathological water loss. At a concentration of 10^{-4} and 10^{-5} mol only the water holding power of protoplasts is damaged, and not the semi-permeability of plasma membranes, so that only a pathological water loss occurs.

Kuhn, H.
LOW-NICOTINE TOBACCOS. [1958] 36p. (2 figs. 1 formula omitted).
Order from SLA mi$3.00, ph$6.30 59-10258

Trans. of [Fachliche Mitteilungen der Österreichischen Tabakregie (Austria) 1958, no. 2, p. 3-18].

The industrial processes for decreasing nicotine are surveyed and the biological possibilities of a nicotine decomposition or destruction during fermentation are reviewed. A detailed discussion of the secondary aklaloids in tobacco with special attention to their presence, their analysis, and their pharmaco-dynamic role concludes the work.

ASTRONOMY

Mel'nikov, O. A.
CONTINUOUS SPECTRA OF "RADIO-STARS" (Nepreryvnyye Spektry "Radiozvezd"). [1959] [4]p. 5 refs. F-TS-9791/III.
Order from LC or SLA mi$1.80, ph$1.80 59-16046

Trans. of Priroda (USSR) 1958 [v. 47, no. 7] p. 84-85.

The distribution of energy is given for Cassiopeia A, Cygnus A, Virgo A, and in almost all cases, the distribution of energy in radio emission spectra can be represented as $I(\nu) \sim \nu^{x}$, the sign "x" being called the spectral index. The results show that an emission from the majority of radio sources in a radio band is not an emission from a black or gray body, but to a greater extent is a reflection of a continuous emission, the nature of which has not yet been fully fathomed.

Astrophysics

*ASTRONOMICHESKIY ZHURNAL (USSR) 1958, VOL. 35, NO. 3, P. 321-512 (Astronomical Journal). [1959] 1v. [SOV]-33-35-3-(1-27)/27.
Order from OTS $0.70, $4.00/year PB 141 028T-1
Foreign $0.95, $5.50/year

Consists of abstracts in English.

Krat, V.
ELECTRICAL CHARGES IN THE SOLAR CORONA (Elektricheskiye Zaryady v Solnechnoy Korone). [1959] [8]p. 3 refs. F-TS-9613/V.
Order from LC or SLA mi$1.80, ph$1.80 59-16040

Trans. of Akademiya Nauk SSSR. Doklady, 1948, v. 61, no. 1, p. 31-34.

The possible influence of the electrical conductivity of the interstellar gas on the stationary charge of the sun is evaluated without making any special hypotheses as to the causes for the ionization of hydrogen, or as to the distribution of ions and electrons in interstellar space.

Nikitin, A. A.
THE QUESTION OF THE APPEARANCE OF OXYGEN LINES IN THE SPECTRUM OF THE SUN AND OF CERTAIN STARS (v Voprosu o Poyavlenii Liniy Kisloroda v Spektre Solntsa i Nekotorykh Zvezd). [1959] [6]p. 7 refs. F-TS-9626/V.
Order from LC or SLA mi$1.80, ph$1.80 59-16061

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 84, no. 5, p. 913-915.

The possibility is considered of identifying certain lines in the spectrum of the solar disc and certain other stars with the lines of the oxygen atom due to transitions associated with changes of principal quantum number. A consideration of the spectral terms 01 indicates that the finding of the following lines is the most probable:
λ 4368.3 ($3^3S - 4^3P$), 3692.441 ($3^3S - 5^3P$), 3947.4 ($3^5S - 4^5P$).

Parenago, P. P.
SPIRAL STRUCTURE OF THE GALAXY FROM RADIO OBSERVATIONS ON THE 21 cm WAVE LENGTH (O Spiral'noy Strukture Galaktiki po Radioablyudeniyam na Volne 21 sm) tr. by M. Slade. [1959] [32]p. 17 refs. Trans. no. 3033.
Order from LC or SLA mi$3.00, ph$6.00 59-15040

Trans. of Astronomicheskiy Zhurnal (USSR) 1955, v. 32, no. 3, p. 226-238.

Conclusions as to the character of the spiral branches have been derived from the results of radio-observations on the distribution of neutral interstellar hydrogen, reported in two Dutch papers in 1954. Other data have been used too. From the two papers, the branches appear to be nearly circular in character; the circularity turns distinctly into trailing, especially so, if we take into account that for objects in the plane component of the Galaxy there is a negative K-effect, which is considered to be proportional to the distance. Besides the most probable values of the circular velocity and of the corresponding A and B quantities have been derived for the neighborhood of the Sun, and the distance from the Sun to the galactic centre has been estimated.

Shvestka, Zdenek.
IN ONDREJOVO (INSTITUTE FOR ASTRONOMY OF THE CZECHOSLOVAK ACADEMY OF SCIENCES IN ONDREJOVO) (V Ondrzheyove "Institute Astronomiy Chekhoslovatskoy Akademiy Nauk V Ondrzheyove"). [1959] [6]p (1 illus. omitted) F-TS-9792/III.
Order from LC or SLA mi$1.80, ph$1.80 59-16045

Trans. of [Nauka i Zhizn'] (USSR) 1958 [v. 25] no. 8, p. 37-38.

The activity of the observatory of the Institute of Astronomy of the Czechoslovak Academy of Sciences at Ondrejovo in connection with the International Geophysical Year is briefly described. The chief object of investigation at this observatory is the phenomenon of chromospheric explosions.

Waldmeier, M.
STIMULTANEOUS DISTURBANCES ON THE SUN, IN THE TERRESTRIAL MAGNETISM, AND IN THE IONOSPHERE. [1959] 1p. 3 refs.
Order from SLA mi$1.80, ph$1.80 59-10110

Trans. of die Naturwissenschaften (Germany) 1942, v. 30, no. 17/18 [p. 260].

BIOLOGICAL SCIENCES

BULLETIN OF EXPERIMENTAL BIOLOGY AND MEDICINE 1958, VOL. 46, NOS. 7, 8, P. 761-1025. 1959, 2v.
Order from CB $10.00 each, $20.00/year

Trans. of Byulleten' Eksperimental'noy Biologii i Meditsiny (USSR).
1958, v. 46, no. 7, p. 3-117
1958, v. 46, no. 8, p. 3-126

Platonov, K. K.
MAN IN FLIGHT. 2D. ED. REV. [1958] 326p. 2 refs. F-TS-9381/V.
Order from OTS $5.00 59-11879

Trans. of Chelovek v Polete, 2d ed. rev., Moscow, 1957, 286p..

This book is intended for students of aeroclubs and flying schools, for the flight personnel of the regular military units of the Soviet Army Air Force, and for the wide circle of youth interested in aviation. After a short survey of the development of Russian aviation medicine, environmental factors are described which are encountered at various altitudes and at different speeds of movement in the air. Particular attention is given to those factors which influence the physiological processes such as temperature, air pressure, oxygen supply, relative airflow, rolling, bumping, and pitching of the aircraft. The influence of these factors upon the respiratory, sensory, circulatory, and digestive apparatus are dealt with and the dangers for life, health, and efficiency emphasized which man is liable to encounter under the combined impact of unfavorable action and survival conditions. The symptoms of altitude sickness, oxygen starvation, aeroembolism, and acceleration reaction are described, and all those measures and apparatus are discussed which have been invented and applied to minimize the unfavorable conditions of high altitude and great acceleration. In this connection, the great importance of training, personal hygiene, proper diet, psychological adjustment, and combating fatigue is stressed.

Anatomy and Physiology

PROBLEMS OF HEMATOLOGY AND BLOOD TRANSFUSION, 1958, VOL. 3, NO. 5, P. 277-347. Feb 59, 1v.
Order from PP $20.00/year

Trans. of Problemy Gematologii i Perelivaniya Krovi (USSR) 1958, v. 3, no. 5, p. 3-61.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Contents:
Section S. Human and Animal Morphology.

No. 14, Abstracts 64706-64886, JPRS: 1669-N, 59-13595
No. 16, Abstracts 74257-74403, JPRS: 1665-N, 59-13591

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 18 (Soviet Abstracts. Biology). 10 June 59, 83p. JPRS: 1624-N.
Order from OTS $1.00 59-13555

Contents:
Section T. Human and Animal Physiology. Abstracts 83836-84703.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Arutyunov, G. and Udalov, Yu.
VITAMINS IN THE DIET OF PILOTS (Vitaminy v Pitanii Letchika). 29 Apr 59 [3]p. AF 1255791.
Order from LC or SLA mi$1.80, ph$1.80 59-16334

Trans. from Sovetskaya Aviatsiya (USSR) 1959, 11 Apr p. 2.

Vitamin requirements are explained in laymen's terms.

Baumgarten, R. v., Baumgarten, A. v., and Schaefer, K.-P.
CONTRIBUTION ON THE QUESTION OF THE LOCALIZATION OF BULBORETICULAR RESPIRATORY NEURONS IN CATS (Beitrag zur Lokalisationsfrage Bulboreticulärer Respiratorischer Neurone der Katze). [1959] 2p. [6 illus. omitted].
Order from SLA mi$1.80, ph$1.80 59-15551

Partial trans. of Pflüger's Archiv [für die Gesamte Physiologie des Menschen und der Tiere] (Germany) 1957, v. 264 [no. 3] p. 217-227. (Summary only). Complete translation is available from SLA mi$2.40, ph$3.30 as 59-10637 [1958] 15p.

Respiratory neurons were traced with the aid of microelectrodes in the rhombencephalon of the cat. Inspiratory neurons are always found in larger numbers in the area of the reticular substance immediately ventral to the tractus solitarius. Expiratory units were found in larger numbers in the caudal sections of the bulbar reticular substance. The respiratory structures here described constitute only a small segment of the central respiratory system.

Baumgarten, Rudolf von.
COORDINATION FORMS OF INDIVIDUAL GANGLION CELLS OF THE RHOMBENCEPHALIC RESPIRATORY CENTERS [Koordinationsformen Einzelner Ganglienzellen der Rhombencephalen Atemzentren]. [1959] 35p. 22 refs.
Order from SLA mi$3.00, ph$6.30 59-15248

Trans. of Pflüger's Archiv [für die Gesamte Physiologie des Menschen und der Tiere] (Germany) 1956, v. 262 [no. 6] p. 573-594.

Microelectrode research on rhythmically discharging respiratory ganglion cells in the cat medulla oblongata indicate that, according to phase relationship, inspiratory and expiratory neurons can be distinguished, as well as neurons the phase relationship of which is variable. When the peripheral respiration is completely inhibited by succinyl injection, the discharge impulses of the respiratory neurons continue without decrease but with lengthening of the phases. The inspiratory and expiratory neurons are located in small multiple cell groups of similar activity within the substantia reticularis.

Baumgarten, Rudolf von.
FORMS OF COORDINATION OF INDIVIDUAL GANGLIONIC CELLS OF THE RHOMBENCEPHALIC RESPIRATORY CENTERS (Koordinationsformen Einzelner Ganglienzellen der Rhombencephalen Atemzentren). [1959] 2p.
Order from SLA mi$1.80, ph$1.80 59-15195

Partial trans. of Pflüger's Archiv [für die Gesamte Physiologie des Menschen und der Tiere] (Germany) 1956, v. 262 [no. 6] p. 573-594 (Summary only) Complete translation is available from SLA mi$3.00, ph$6.30 as 59-15248 [1959] 35p.

For abstract see 59-15248 above.

Daykhovskiy, Ya. I.
AN ELECTROGRAPHIC STUDY OF THE MOTILITY OF THE DUODENUM (Elektrograficheskoye Izucheniye Avtomatii Dvenadtsatiperstney Kishki). [1959] 8p. 16 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15398

Trans. of Fiziol[ogichnyy] Zhur[nal] (USSR) 1939, v. 27, no. 5, p. 559-563.

The contractions of the duodenum have their own peculiar periodicity, character and rhythm. The contractions of the duodenum and of the body of the stomach are unconnected and are independent of one another. The electrogastrogram shows that the pylorus and the duodenum have different centers of excitation.

Faur, A. S., Firu, P. and Neagu, N.
RADIOLOGIC STUDY OF THE EVOLUTION OF THE CRANIOFACIAL SINUSES IN MAN, IN RELATION TO AGE, SEX AND DEVELOPMENT OF THE MASTICATORY APPARATUS (Étude Radiologique de l'Évolution des Sinus Cranio-faciaux chez l'Homme, par Rapport à l'Âge, au Sexe et au Développement de l'Appareil Masticateur) tr. by Lyle M. Harrah. 14 Dec 58, 17p. (13 figs. omitted).
Order from SLA mi$2.40, ph$3.30 59-15587

Trans. of Canad[ian] D[ental] A[ssociation and Ontario Dental Society]. J[ournal] 1958, v. 24, p. 615-628.

Theories concerning the function of the frontal sinuses are reviewed. Data are presented on the radiographic examination of the frontal sinuses of 60 skulls (infancy to 80 yr) in the collection of the Institute of Anthropology of Bucharest.

Goromosov, M. S.
COMBINED INDEXES OF THE EFFECT OF VARIOUS METEOROLOGICAL FACTORS ON THE ORGANISM AND CRITICISM OF THEM. 6 May 59, 11p. 24 refs. JPRS: L-757-N.
Order from OTS $0.50 59-13451

Trans. of Gigiyena i Sanitariya (USSR) 1958 [v. 23] no. 7, p. 66-71.

Since the search for such indexes is continuing, and several are being used in certain foreign countries, it is of interest in the light of modern tasks of housing hygiene to consider critically and to evaluate present proposals in this field. The basic physiological criterion for evaluating and substantiating hygienic norms for the microclimate of dwellings with allowance for the fact (established by the Pavlovian school) of various alignments of the cortical mechanisms of heat regulation in man in different climatic zones, are reactions of heat-regulation character. The author believes that the combined application of sanitary statistical investigations with experimental physiological observations on the reactions of the organism to conditions in the environment, and the simultaneous study of the physical peculiarities of the microclimate in residential buildings in various climatic regions of the USSR, represents the most effective direction to be followed in the future in studying norms for the microclimate in residential buildings, and in providing them with a hygienic foundation.

Krestowskiy, I.
SOVIET AVIATION: SPACE BREAKFAST (Sovetskaya Aviatsiya: Kosmytcheskiy Zavtrak) tr. by Minor. [1959] 5p. (1 illus. omitted) H-2843 B.
Order from LC or SLA mi$1.80, ph$1.80 59-14322

Trans. from Sovetskaya Aviatsiya (USSR) 1958, 12 July.

A few of the physiological problems of space flight are described in laymen's terms. Reference is made to the nutritional value of algae and mollusks.

Ranvier, Louis-Antoine.
HISTOLOGY OF THE SKIN. III. DEFINITION AND NOMENCLATURE OF THE LAYERS OF THE EPIDERMIS IN MAN AND IN MAMMALS. IV. ON SOME HISTOCHEMICAL REACTIONS OF ELEIDIN (Histologie de la Peau. III. Définition et Nomenclature des Couches de l'Épiderme chez l'Homme et les

Mammifères. IV. Sur Quelques Réactions Histochimiques de l'Éléidine). [1959] 6p. (6 figs. omitted). Order from SLA mi$1.80, ph$1.80 59-15545

Trans. of Arch[ives] d'Anat[omie] Micr[oscopique] (France) 1899, v. 3, p. 3-10.

Biochemistry

BIOCHEMISTRY, 1958, VOL. 23, NO. 5, p. 603-757. 1959, 1v.
Order from CB $10.00, $20.00/year

Trans. of Biokhimiya (USSR) 1958, v. 23, no. 5, p. 641-[800].

Bazzigher, G.
TANNIN AND PHENOL SPLITTING ENZYMES OF THREE PARASITIC FUNGI (Tannin- und Phenolspaltende Fermente Dreier Parasitischer Pilze) tr. by W. Knie. [1959] [6]p. 6 refs. Trans. no. 4200. Order from SLA mi$1.80, ph$1.80 59-15259

Trans. of Phytopathologische Zeitschrift (Germany) [1958] v. 29, no. 3, p. 299-304.

Esterase and pyrogallase activity were detected in vitro and in vivo from various phytopathogenic fungi. These enzymes were responsible for the breakdown of tannis, gallic acid and various phenols. Methods are described for the measurement of enzyme activity and for the separation of the two enzymes. Experiments with normal enzyme inhibitors showed that the enzymes were relatively stable, although glucose and hydroquinone were inhibitory for pyrogallase. Both enzymes were stable over a wide temparature range. The in vivo action of these enzymes would appear to exclude the function of tannins, gallic acid and phenols as factors in the disease resistance of the hosts.

Bernhard, K. and Bühler, U.
RETENTION AND EXCRETION OF α-PHENYL-α-PIPERIDYL-(2)-ACETIC ACID METHYL ESTER. (Retention und Ausscheidung von α-PHENYL-α-piperidyl-(2)-Essigsäuremethylester). [1959] 3p. Order from SLA mi$1.80, ph$1.80 59-15051

Trans. of Helvetica Physiol[ogica] et Pharmacol[ogia] Acta (Switzerland) 1957, v. 15, no. 4, p. 52-53.

Ginetsinskiy, A. G., Zaks, M. G., and Titova, L. K.
THE MECHANISM OF THE EFFECT OF THE ANTIDIURETIC HORMONE. [1959] [6]p. 6 refs. Order from LC or SLA mi$1.80, ph$1.80 59-15366

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 120, no. 1, p. 215-218.

Kidneys of white rats killed at the height of diuresis caused by excess water, and of a second group killed after a 48-hr water starvation or after injection of pituitrin were examined histochemically. It was established that an enzyme secreted by the cells of the collecting tubes depolymerizes the hyaluronic complexes so that structures penetrable to water are formed. The collecting tubes are the basic location for the facultative reabsorption of water.

Heinrich, H. C.
STRUCTURAL SPECIFICITY OF THE ABSORPTION AND INTRINSIC FACTOR BINDING OF VITAMIN B_{12}. 17 Mar 59, 4p. 4 refs.
Order from SLA mi$1.80, ph$1.80 59-15357

Trans. of [die] Naturwissenschaften (Germany) 1958, v. 45, no. 11, p. 269-270.

Herzfeld, E. and Stumpf, Ch.
STUDIES ON THE CHOLINESTERASE-INHIBITING ACTION OF POLYMETHYLENE-BIS-(N-METHYLOARBAMINOYL-m-TRIMETHYLAMMONIUM PHENOLS) (Untersuchungen über die Cholinesteraseheммwirkung der Polymethylen-bis-(N-Methyl-Carbaminoyl-m-Trimethylammoniumphenole) tr. by M. F. Wilson. 2 Dec 58 [18]p. 26 refs.
Order from SLA mi$2.40, ph$3.30 59-15412

Trans. of Archives Internationales de Pharmacodynamie et de Thérapie (Belgium) 1956, v. 107 [no. 1] p. 33-44.

Essential differences were found in cholinesterase-inhibiting action between octamethylene-bis-(N-methyl-carbaminoyl-m-trimethylammonium phenol) (BC 47) and neostigmine in the plasma of dogs. BC47 adheres more firmly to both types of cholinesterase than does neostigmine; no dissociation of the acetylcholinesterase-BC 47 complex could be demonstrated. BC 47 is not decomposed by the butyrylcholinesterase. Both properties are held responsible for the prolonged action of BC 47 that was confirmed in vivo recently by determination of the inhibition of cholinesterase. The nature of the high stability of the cholinesterase-BC 47 complex is discussed.

Ishihara, Y. and others.
STUDIES ON THE PROTEIN IN WHALE PANCREAS SHOWING A PROLONGED HYPOGLYCEMIC EFFECT. [1959] 8p. (5 figs. 8 refs. omitted) 3 refs.
Order from SLA mi$1.80, ph$1.80 59-15603

Trans. in manuscript of [Yakugaku Zasshi] (Japan) 1958, v. 78, p. 1237-1241.

Kebrle, J., Schmid, K. and others.
BEHAVIOR OF α-PHENYL-α-ETHYL-GLUTARIMIDE IN THE ANIMAL BODY. II. ISOLATION AND STRUCTURAL CLARIFICATION OF THE METABOLITES OF α-PHENYL-α-ETHYL-GLUTARIMIDE (Uber das Verhalten von α-Phenyl-α-äthyl-Glutarimid im Tierkörper. II. Isolierung und Strukturaufklärung der Metaboliten von α-Phenyl-α-äthyl-Glutarimid). [1959] 22p. 9 refs.
Order from SLA mi$2.70, ph$4.80 59-15641

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1959, v. 42, no. 2, p. 417-425.

The detoxification of α-phenyl-α-ethyl-glutarimide ("Doriden") in the animal organism occurs principally by coupling with glucuronic acid. The products of the glucuronic acid coupling were isolated from the urine of dogs and were found to be pharmacologically inactive. The main components of the glucuronide mixture were isolated as crystalline derivatives; their structure was established by degradation and synthesis of the aglucone residue.

Kondo, Tsutomu.
AMINO ACID METABOLISM IN BRAIN. I. STUDY ON THE EXCRETION OF γ -AMINOBUTYRIC ACID IN URINE AFTER ITS INJECTION. [1959] [8]p.
Order from SLA mi$1.80, ph$1.80 59-15771

Trans. of [Seikagaku] (Japan) 1958, v. 30, no. 6, p. 444-446.

Quantitative determinations by paper chromatography indicated that γ -aminobutyric acid injected in rabbit vein is eliminated immediately from the blood into the urine. However, over half of the injected amount (250 mg/kg of weight) is not demonstrated. The glycine and β -alanine, which are presumed to be the metabolic and catabolic products of the γ -aminobutyric acid, were unusually small quantities relative to the quantity of γ -aminobutyric acid administered.

Kraupp, O. and Schnetz, E.
THE INFLUENCE OF HEPARIN ON THE HYPOCHOLESTEREMIC ACTION OF NICOTINIC ACID. (Der Einfluss des Heparins auf die Hypocholesterinämische Wirkung der Nicotinsäure). [1959] 19p. 13 refs.
Order from SLA mi$2.40, ph$3.30 59-15489

Trans. of Naunyn-Schmiedeberg's Arch[iv für] Exp[erimentelle] Path[ologie] u[nd] Pharmak[ologie] (Germany) 1959, v. 235 [no. 2] p. 103-112.

The effects of intravenously administered nicotinic acid (N^S) on the serum levels of various cholesterol fractions with and without pre- and post treatment of heparin were investigated in cholesterol fed dogs. Following a test meal of 10 gr cholesterol all cholesterol fractions rose significantly with a concomitant shift of cholesterol from the β to the α-globulins and albumins during a period of 8 to 10 hr]. The intravenous injection of 50 mg/kg NS at a time 5 hr after cholesterol feeding produced a sudden and significant fall in the serum cholesterol recorded by Zak's alcohol-acetone extraction procedure. The effect was manifest to 3/4 on the cholesterolesters and only to 1/4 on the free cholesterol-fraction. Heparin in a dose of 350 IU/kg i.v., given 4 hr after the NS injection, reversed the NS effect producing a sudden rise of the extractable esterified and free cholesterol on the original levels before NS application. Heparin (350 IU/kg) given at varying intervals before NS administration inhibited the effects of NS on serum cholesterol in all experiments with an interval longer than half an hour. Two hours after the heparin injection the NS effect was practically abolished.

Pullman, Bernard and Pullman, Mrs. Albert E.
RESEARCH IN ANTICANCER CHEMOTHERAPY, ON THE ELECTRONIC STRUCTURE OF THE FUNDAMENTAL CELLULAR CONSTITUENTS AND OF THE ACTIVE COMPOUNDS. III. THE ANTIMETABOLITES OF THE PURIC BASES. [1959] [20]p. (17 figs. omitted) 45 refs.
Order from SLA mi$2.40, ph$3.30 59-15762

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1958, no. 7, p. 973-980.

Study, by the orbital-shells-in-molecules method, of the electronic structure of the antagonists having puric bases, has permitted establishing certain correlations between different characteristics of this structure and the antitumoral activity. The most significant correlations concern the electronic indices of heteroatoms, in particular of nuclear nitrogens, and appear to be associated with the circumstances under which ribotides are formed, with the reaction possibilities symbolized by the establishment of coordinate bonds or the formation of chelates with the metallic ions, and also with the possibilities of incorporation into the nucleic acids by the formation of appropriate hydrogen bonds.

Weber, F. Gloor, U. and Wiss, O.
ON THE MECHANISM OF THE REACTIVATION OF THE SUCCINATE-CYTOCHROME c REDUCTASE BY VITAMINS E AND K. 5 Mar 59, 20p. 7 refs.
Order from SLA mi$2.40, ph$3.30 59-15372

Trans. of Helvetica Chimica Acta (Switzerland) 1958, v. 41, p. 1038-1046.

Cytochrome c reductase, inactivated by extraction, can be reactivated not only by α-tocopherol but also by its acetate. Not only vitamin K_1 but also di-O-acetyl-dihydro-vitamin K_1 has been found to be active as well as vitamin K_2. Phytol and squalene are reactivating to the same extent as vitamin K_1 resp. K_2. Isophytol and phytanoic acid are also active. Stearic acid, oleic acid, linoleic acid, vitamin A and cholesterol are inactive.

Weber, F., Gloor, U. and Wiss, O.
THE REACTIVATION OF SUCCINATE-CYTOCHROME c REDUCTASE BY VITAMIN K_1, 2-METHYL-1,4-NAPHTHOQUINONE AND UBIQUINONE. 5 Mar 59, 11p. 6 refs.
Order from SLA mi$2.40, ph$3.30 59-15371

Trans. of Helvetica Chimica Acta (Switzerland) 1958, v. 41, p. 1046-1052.

Two mechanisms can be admitted for the reactivation of the succinate-cytochrome c reductase system. Reactivation of the extracted system by isoprene-like substances (vitamins E and K) is to be distinguished from an unspecific reactivation by 2-methyl-1,4-naphthoquinone, which is caused by the redox system. Ubiquinone does not reactivate by its redox system but probably its isoprene-like side chain.

Microbiology

JOURNAL OF MICROBIOLOGY, EPIDEMOLOGY AND IMMUNOBIOLOGY, 1958, VOL. 29, NOS. 7, 10, P. 1015-1176, 1539-1705.
Order from PP $50.00/year

Trans. of Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR)
1958, v. 29, no. 7, p. 3-163
1958, v. 29, no. 10, p. 3-159

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR)
1958 (Soviet Abstracts. Biology)
Order from OTS $1.00 each

Contents:
Section E. Virology.

No. 12, Abstracts 52568-52667, JPRS: 1604-N, 59-13539
No. 16, Abstracts 71779-71877, JPRS: 1683-N, 59-13611

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR)
1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Contents:
Section F. Microbiology.

No. 12, Abstracts 52680-52943, JPRS: 1605-N, 59-13540
No. 20, Abstracts 90670-90970, JPRS: 1690-N, 59-13618
No. 21, Abstracts 94929-95229, JPRS: 1682-N, 59-13610

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Alikhanyan, S. I. and Mindlin, S. Z.
DEVELOPMENT OF BIOCHEMICAL MUTANTS OF ACTINOMYCES RIMOSUS FOR THE DERIVATION OF HYBRID FORMS. [1959] 6p. 13 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15748

Trans. of Akad[emiya] Nauk SSSR. Doklady] 1957, v. 114, no. 5, p. 1113-1115.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as 59-10143, 14 Nov 58, 7p.

Bömeke, H.
THE RELATION OF OXIDIZED NITROGEN TO REDUCED CARBON IN CONNECTION WITH NITRATE FORMERS (Über das Verhältnis des Oxydierten Stickstoffs zum Reduzierten Kohlenstoff beim Nitratbildner). [1959] [14]p. 9 refs.
Order from SLA mi$2.40, ph$3.30 59-15277

Trans. of Archiv für Mikrobiologie (Germany) 1954, v. 20 [no. 2] p. 176-182.

An investigation of the oxidized N/assimilated C relation was carried out on the nitrate former, Nitrobacter, strain 14. It was found that the best method of concentrating the culture for carbon determination was by evaporation, and that the quantity and layer depth of the culture solution have practically no influence on the level of the N/C ratio. On the basis of 56 analyses, it was found that the C-value of Nitrobacter cells is not completely constant; it decreases rapidly at first and later slows down. The resulting displacement of the N/C ratio was approximately as follows: 25-day-old cultures 105/1, 50-day-old cultures 110/1, 100-day-Old cultures 112/1, and 200-day-old cultures 114/1. From this it is concluded that the autotrophic Nitrobacter cells possess a dissimilatory metabolism and can decompose organic substances belonging to their own body.

Dmitriyeva, V. S. and Kologrivova, V. P.
NEW NUTRIENT MEDIA FOR DETERMINING THE ACTIVITY OF ANTIBIOTICS. [1959] 4p.
Order from ATS $5.20 ATS-93K24R

Trans. of Med[itsinskaya] Prom[yshlennost'] SSSR, 1958 [no.] 4, p. 41-43.

Pathology

MILITARY MEDICAL JOURNAL, 1959, NO. 2.
4 June 59, 160p. (figs. omitted) JPRS: 1634-N.
Order from OTS $3.00 59-13564

Trans. of Voyenno-Meditsinskiy Zhurnal (USSR) 1959, no. 2.

Discussions are presented on: (1) N. I. Pirogov and his principles of organization of medical care in war, (2) the experience of a field hospital in the organization of therapeutic-prophylactic care among the troop units, (3) potentiated anesthesia in emergency surgery and traumatology, (4) potentiated intramedullary anesthesia in combination with barbiturates, (5) the clinical significance of the gastrographic method of examination, (6) a study of the vascular permeability of the eye by the method of tagged atoms, (7) the provision of the body with vitamin C amd B_6 under Arctic conditions, (8) a comparative evaluation of the sensitivity and specificity of certain serologic reactions, (9) an accelerated method for indicating bacterial contamination, (10) fluorography of the paranasal sinuses in the selection of naval specialists, (11) the selection of types of litters for equipping

ships, (12) experience in the comprehensive examination of personnel at remote outposts, (13) the detection of early and latent forms of thyrotoxicosis by the method of radioactive iodine determination of thyroid function, (14) the study of neuroses in aviators, (15) shortcomings of medical selection in the Air Force schools, (16) experience in the use of potentiated anesthesia in a field hospital, (17) potentiated anesthesia, (18) the use of potentiated intratracheal anesthesia under field hospital conditions, and (19) surgical treatment of peptic ulcer complications.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR)
1958 (Soviet Abstracts. Biology)
Order from OTS $1.00 each

Contents:
Section U. General Problems of Pathology.

No. 14, Abstracts 65880-66177, JPRS: 1668-N, 59-13594
No. 15, Abstracts 70692-71003, JPRS: 1663-N, 59-13589
N . 20, Abstracts 93765-94090, JPRS: 1732-N, 59-13672

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Agata, A. de
THERAPY OF CHRONIC ULCEROHEMMORRHAGIC PROCTO-SIGMOIDITIS WITH 5, 6-QUINONE-4, 7-PHENANTHROLINE GIVEN RECTALLY (La Terapia della Procto-Sigmoidite Ulcero-Emorragica Cronica con la 5, 6-Chinon-4, 7-Fenantrolina Introdotta per Via Rettale). [1959] [26]p. 88 refs.
Order from SLA mi$2.70, ph$4.80 59-15553

Trans. of Gazz[etta] Internaz[ionale] di Med[icina] e Chir[urgia] (Italy) 1958, v. 63, p. 803-817.

Eight case histories are presented. 5, 6-quinone-4, 7-phenanthroline was administered rectally over a period of 10 to 60 days, in doses of 0.10 to 0.20 g daily, divided into 3 applications. Five patients checked at the end of 30 mo have recovered, and two show marked improvement.

Agostini, A.
EFFECT OF COLCEMIDE ON SKIN EPITHELIOMAS (Considerazioni sull'Effetto del Colcemid negli Epiteliomi Cutanei). [1959] 11p. (9 figs. omitted) 7 refs.
Order from SLA mi$2.40, ph$3.30 59-15854

Trans. of Arch[ivio] Ital[iano di] Dermat[ologia, Sifilografia e Venereologia] (Italy) 1955, v. 27 [no. 3] p. 271-281.

14 cases of epithelioma were treated by peritumoral and intratumoral infiltration of liquid Colcemide (N-desacetyl-N-methyl-colchicine) in doses of 1 to 2 cc at intervals of 3 or 4 days, the course consisting of 7 to 10 injections. Local and general tolerance were optimal. In 3 cases an apparent complete cure has been maintained for 2 to 3 mo. In 4 cases a distinct improvement of the lesion is noted. Of the remainder, one became worse. Histological examination indicates that the neoplasm persists in the tissues in apparent clinical cure, although extremely reduced and changed. The destructive action of Colecmide is exerted electively on the nuclei of the neoplastic cells. The connective tissue does not present any definite changes comparable to those produced by the estrogens.

Barandun, S., Kipfer, R. and others.
THE THERAPEUTIC USE OF GAMMA-GLOBULIN IN BACTERIA INFECTIONS. [1959] [23]p. 11 refs.
Order from SLA mi$2.70, ph$4.80 59-15730

Trans. of Schweizerische Medizinische Wochenschrift (Switzerland) 1957, v. 87, no. 7, p. 155-159.

Seven case histories are presented to illustrate the effectiveness of administration of standard gamma globulins to patients with severe bacterial infections but who did not have any evidence of hypogammaglobinemia as shown by electrophoretic analysis of serum proteins. In sufficiently high doses (10 ml of 16% gamma-globulin solution every 6 hr up to approximately 0.5 ml/kg body wt, and in exceptional cases to a total of 1.0 ml/kg body wt) the treatment was successful in severe generalized infections due to pneumococci, streptococci and staphylococci.

Bock, E. and Schneeweiss, J.
CORTICOSTEROID THERAPY OF DIABETICS WITH SPECIAL REFERENCE TO INTRAARTICULAR ADMINISTRATION (Kortikosteroidbehandlung bei Diabetikern unter Besonderer Berucksichtigung der Intraartikularen Applikation). [1958] 9p. 12 refs.
Order from SLA mi$1.80, ph$1.80 59-10831

Trans. of Therapie der Gegenwart (Germany) 1958, v. 97, [no. 8] p. 312-314.

Intraarticular corticosteriod therapy was adminstered to 28 diabetics with a predominantly balanced metabolism for arthritic complaints in knee and shoulder joints. Prednisolone trimethylacetate (10 to 20 mg) and 17-alpha-oxycorticosterone acetate (25 to 50 mg) were injected 2 or 3 times. All patients reported distinct relief from joint pain. In observation periods ranging from 1 to 5 1/2 wk, no changes in sugar metabolism were observed.

Brissaud.
LITTLE'S DISEASE AND SPASMODIC TABES (Maladie de Little et Tabes Spasmodique). [1959] 16p. (6 figs. omitted) 18 refs.
Order from SLA mi$2.40, ph$3.30 59-15610

Trans. of Semaine Méd[icale] (France) 1894, v. 14, p. 89-92.

Bukhanov, Ya. G. and Babushkina, V. T.
THE USE OF PLACENTAL BLOOD FOR THE PURPOSE OF PROPHYLAXIS OF BLOOD LOSS IN POSTPARTUM AND EARLY POST-PARTUM PERIODS. 23 Mar 59, 4p. (1 fig. omitted). JPRS: L-710-N.
Order from OTS $0.50 59-13336

Trans. of Sovetskaya Meditsina [Moscow] (USSR) 1958, v. 22, no. 3, p. 100-102.

Placental blood, taken immediately after delivery from the umbilical vein of the infant in 10 to 15 ml concentrations, was injected intramuscularly into the hip of 500 parturient women. Data on the use of placental blood in the third stage of labor was compared with the clinical records of 500 patients not given injections. Results showed, that there was no disruption of the third stage of labor, that concentrations of uterus retain their physiological character, that there is considerable reduction in blood loss and that the injections exert a favorable influence on the course of the postpartum period.

Curschmann, Hans.
MENOPAUSE AND MYXEDEMA (Klimax and Myxödem). Feb 59 [3]p.
Order from SLA mi$1.80, ph$1.80 59-10844

Partial trans. of Zeitschrift für die Gesamte Neurologie und Psychiatrie (Germany) 1958, v. 41, p. 155-169. (Abstract in Jahresbericht über die Leistungen und Fortschritte auf dem Gebiete der Neurologie und Psychiatrie (Germany) 1958, v. 22, p. 297.

Divakov, D.
IN A FOCUS OF CONTAMINATION. 22 Apr 59, 5p. (2 figs. omitted). JPRS: L-750-N.
Order from OTS $0.50 59-13444

Trans. of Voyennyye Znaniya (USSR) 1958, v. 34, no. 7, p. 24-25.

First aid instructions are given in laymen's terms for persons in target areas of atomic, chemical or bacteriological warfare.

Feodosyeva, N. E.
HYPERTROPHY OF THE ADRENAL GLANDS AFTER REMOVAL OF THE OVARIES. [1959] 2p. 1 ref.
Order from SLA mi$1.80, ph$1.80 59-10839

Trans. of Ruskiy Vrach (USSR) 1906, v. 5, p. 135.

Experimental study.

Fischer, F. P., Vermeulen, D., and Eymers, J.G.
THE MINIMUM QUANTITY OF ULTRA VIOLET AND INFRA RED LIGHT NECESSARY FOR THE INJURY OF THE EYE. [1959] 5p. [1 table omitted].
Order from SLA mi$1.80, ph$1.80 59-15711

Trans. of Arch[iv] f[ür] Augenheilkunde (Germany) [1936] v. 109, p. 462-467.

Fridman, A. S.
OXYGEN THERAPY OF ATHEROSCLEROSIS PATIENTS. 23 Mar 59, 7p. JPRS: L-705-N.
Order from OTS $0.50 59-13331

Trans. of Terapevticheskiy Arkhiv (USSR) 1958, v. 30, no. 4, p. 37-40.

Oxygen therapy was administered to 30 patients over 45 years of age, of whom 21 had cardiosclerosis and sclerosis of the cerebral vessels without circulatory involvement. Dosage was regulated according to individual indications (6 to 8 liters/min: concentrations in the tents about 40 to 50%). The course of treatment consisted of 8 to 20 sessions lasting from 20 min to 1 hr. Supplementary vitamins were administered. The treatment proved to be effective in most cases. Unfavorable side effects or development of oxygen intolerance were not observed.

Glukhova, G. S.
TISSUE PREPARATES IN CATTLE BREEDING. [1959] 3p.
Order from LC or SLA mi$1.80, ph$1.80 59-15389

Trans. of [Veterinariya] (USSR) 1958 [v. 35] no. 7, p. 82-83.

Subcutaneous injections of a spleen tissue preparate applied to pigs resulted in weight gains in excess of those in a control group. The preparation has been used successfully in curing dyspepsia and colds in piglets and calves. Use of the preparate by the collective farms is strongly recommended.

Gukasyan, A. G.
THE PROSPECTIVE PLAN FOR THE MOST IMPORTANT PROBLEMS OF INTERNAL MEDICINE. 19 Mar 59, 15p. JPRS: 1582-N.
Order from OTS $0.50 59-13517

Trans. of Terapevticheskiy Arkhiv (USSR) 1959, v. 31, no. 1, p. 3-12.

Levels of achievement and goals of Soviet medicine are briefly summarized. The USSR ranks first in the world in number of physicians (346,000). The neurogenic theory of hypertensive disease has been generally accepted, and a system has been worked out for early detection of the disease by means of large-scale examinations of the population. A method has been developed whereby diagnosis of myocardial infarction can be made by junior practicing Physicians. Advances in hematology include a new method for the storage of blood without chemical stabilizers (use of ion exchangers which bind the Ca ions in the blood). Public expenditures for medical purposes in 1959-1965 will be 80% more than in 1952-1958.

Knauf, H. -W.
TREATMENT OF THE PARKINSON-LIKE SYNDROME IN RESERPINE AND CHLORPROMAZINE THERAPIES (Beitrag zur Behandlung des Parkinson-ähnlichen Syndroms bei Reserpin- und Chlorpromazinkuren). [1959] 9p. 10 refs.
Order from SLA mi$1.80, ph$1.80 59-15462

Trans. of der Nervenarzt (Germany) 1958, v. 29, [no. 11] p. 520-522.

Clinical results in treatment of 99 patients who had developed Parkinson-like symptoms in the course of reserpine or chlorpromazine therapy are reported. In a period of 2 yr, these patients were treated with Aturban. The dosage ranged between 10 and 15 mg daily. No side effects were noted. The therapeutic effect of reserpine or chlorpromazine on the psychosis was unaffected. The characteristic tremor and salivation were abated.

Jenkner, F. L.
ABOUT THE ACETYLCHOLIN [SIC] THERAPY IN HEAVY CLOSED BRAIN INJURIES (Über die Anticholinerge Therapie der Schweren Geschlossenen Schädelhirntraumen). Mar 59 [6]p. (1 table, 2 figs. and refs omitted).
Order from SLA mi$1.80, ph$1.80 59-15680

Partial trans. of Archiv fllr Klinische Chirurgie (Germany) 1957, v. 286 [no. 2] p. 91-98.

The antiparkinson drug Akineton, 1-bicyclo-2-, 2, 1 (hept-5-en-2-yl)-1-phenyl-3 piperidinopropanol, was administered to 164 injured patients in injections of 5 to 10 mg. Dosages reached a maximum of 30 mg the first day and 15 to 30 mg on the succeeding day. The drug was administered in conjunction with usual procedures (oxygen therapy, administration of glucose penicillin etc.) Consciousness was immediately regained in all but a few exceptional cases which had a fatal outcome. Failure to respond to the initial injection was indicative of bleeding in the diencephalon.

Lebedeva, N. K.
THE PROTEIN COMPOSITION OF THE KIDNEYS, BLOOD SERUM AND URINE OF RATS FOLLOWING DAMAGE CAUSED BY THE ADMINISTRATION OF HEAVY SALTS. 17 Mar 59, 7p. (6 figs. omitted) 5 refs. JPRS: L-693-N.
Order from OTS $0.50 59-13301

Trans. of Voprosy Meditsinskoy Khimii (USSR) 1958, v. 4, no. 5, p. 373-378.

Two groups of white rats, weighing 200 to 300 gm, were injected subcutaneously; one with a solution of uranyl nitrate in doses of 1 mg/ 100gm/ body wt; the other with a mercuric chloride solution in the same dosage. Urine samples were collected daily and the quantity of protein present was determined by combustion and their identity determined by paper electrophoresis. Results showed that, in kidney injuries produced by administration of uranyl nitrate or mercuric chloride to rats, characteristic changes occur in the corresponding protein fractions of the kidney and blood serum. In these afflictions not only does a migration of serum albumins occur in the kidneys and then into urine, but a reverse migration of certain proteins into the serum also is observed.

Liberman, T. Yu.
THE EFFECT OF OXYGEN THERAPY ON CEREBRAL CIRCULATION IN PATIENTS WITH HYPERTENSION. 23 Mar 59, 12p, (3 figs. omitted) 9 refs. JPRS: L-706-N.
Order from OTS $0.50 59-13332

Trans. of Terapevticheskiy Arkhiv (USSR) 1958, v. 30, no. 4, p. 49-57.

An experimental comparison of the responses of arterial and intracranial pressures showed that the breathing of high concentrations of oxygen leads to elevation of the tone of cerebral arteries and to reduction of intracranial pressure, as well as to slight diminution in the systolic pressure peripherally. The breathing of six percent carbogen, while showing no influence on the level of arterial pressure, led to dilatation of the arteries of the brain and a slight decrease in intracranial pressure. As a result of treatments with high concentrations of oxygen in 100 patients with hypertension and severe hypertensive headaches, 93 derived some benefit from the treatments. Of 91 patients in the first and second stages, 60 experienced complete cessation of headache and 28 noticed marked improvement. Of nine patients in the third stage of the disease, five noticed temporary improvement in headache. The breathing of elevated concentrations of oxygen by patients with hypertension did not affect the level of the arterial pressure appreciably. Thus respiration in an atmosphere of high oxygen concentration may be recommended as a method of treating hypertensive headache, which is due to over-distention of the cerebral vessel in patients afflicted with this disease.

Lienau, C.
NEW METHODS OF TREATMENT OF PARKINSONISM. [1959] 6p.
Order from ATS $8.80 ATS-06L31G

Trans. of die Medizinische (West Germany) 1956, no. 11, p. 391-393.

Malykin, R. I., Laptev, V. A. and others.
THE CONDITION OF CEREBRAL BIOCURRENTS (BEATS) IN ECZEMA, NEURODERMATITIS AND NETTLE RASH AND THEIR CHANGES AFTER SLEEP AND NOVOCAINE THERAPY. Sep/Oct 56, 7p. (7 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-15605

Trans. of unidentified Russian mono. from the Central Dermato-Venereal Institute of Scientific Research of the Public Health Ministry of RSFSR.

EEG's of patients suffering from skin diseases were analyzed. Of 42 patients with eczema and neurodermatitis, only 3 had normal EEG's. In the early stages of disease, symptoms of irritation were frequently observed, while in late stages, particularly of eczema, symptoms of inhibition predominate more frequently in the cortex. Medicated sleep therapy was applied to 37 patients suffering with eczema and neurodermatitis, following which the EEG showed a slow activity in the form of high amplitude slow waves of great length, and sometimes a decrease of the amplitude of bioelectric potentials. EEG's of most nettle rash patients showed an integument-influenced stimulation in the cortex. Novocaine treatment of the 3 types of skin disease resulted in a

return of a normal alpha wave in the EEG pattern in the majority of cases.

Man'kovskiy, N. B.
INFORMATION ON REPUBLIC PROBLEMS FOR 1959-1965. 30 Mar 59, 13p. JPRS: L-725-N.
Order from OTS $0.50 59-13371

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1958, v. 13, no. 9, p. 57-62.

The following 26 problems were approved for development in the republic by the Ministry of Health Ukrainian SSR for 1959-1965: (1) the basic rules and regulations of operation of the higher centers of the central nervous system and the interaction between the cerebral cortex and the internal organs normally and pathologically; (2) tuberculosis and the fight against it; (3) etiology and pathogenesis of malignant neoplasms, comprehensive therapy and prophylaxis; (4) cardio-vascular pathology (hypertensive disease, arteriosclerosis, myocardial infraction); (5) physiology and pathology of digestion; (6) rheumatic fever and the fight against it; (7) diseases of the peripheral nervous system, their prophylaxis and treatment; (8) the fight against traumatism and the treatment of the sequelae of traumata; (9) goiter, its prophylaxis and treatment; (10) tissue therapy; (11) the fight against blindness and glaucoma; (12) hematology, transfusions of blood and blood-substitutes; (13) physiological characteristics of childhood as the basis for rational upbringing and prophylaxis of diseases; (14) etiology, pathogenesis, prophylaxis and therapy of the basic complications of pregnancy and childbirth; (15) prophylaxis and treatment of periodontosis; (16) poliomyelitis; (17) acute children's diseases; (18) dysentery and the fight against it; (19) prophylaxis and therapy of influenza; (20) silicosis and the fight against it; (21) hygiene of labor in the leading branches of industry and agriculture; (22) hygienic standards and sanitation of the environment; (23) helminthic infestations and the fight against them; (24) medical radiology and radiation sickness; (25) botkin's disease [infectious hepatitis]; (26) the development of sanitorium-health resort matters in the Ukrainian SSR.

Marberger, Hans.
DIPHOSPHO-DIETHYLSTILBESTROL, "ASTA 52", IN THE THERAPY OF PROSTATIC CARCINOMA. [1959] 7p.
Order from SLA mi$1.80, ph$1.80 59-15399

Trans. of Urologia (Italy) 1957, v. 24, no. 3, p. 310-313.

Markovich, A. V. and Vorob'yev, A. A.
RELATION OF THE INTENSITY OF THE IMMUNITY TO THE DOSE OF ANTIGEN IN A SINGLE IMMUNIZATION. 30 Oct 58, 6p. 2 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15394

Trans. of Byull[eten'] Eksp[erimental'noy] Biol[ogii] i Med[itsiny] (USSR) 1955, v. 39, no. 5, p. 53-56.

Calculations based on experimental data of Troitski and Kovaleva (Zhur. Microbiol. Epidemiol. Immunol., no. 5: 60, 1947) indicate that although the intensity of the immunity in white mice towards dysenteric vaccine is higher than towards typhoid vaccine, the immunoreactivity of these animals is lower to the former than to the latter.

Masson, P.
TWO LEYDIGIAN CANCERS IN MAN, COMPARISON WITH EXPERIMENTAL INTERSTITIAL TUMOR IN MICE (Deux Cancers Leydigiens de l'Homme. Leur Comparaison avec les Tumeurs Interstitielles Expérimentales de la Souris). [1959] 13p. (15 figs. omitted).
Order from SLA mi$2.40, ph$3.30 59-15538

Partial trans. of Rev[ue] Canadienne de Biol[ogie] 1943, v. 2 [no. 2] p. 168-243.

Only one case history has been translated. Material on experimental neoplasms in mice is also omitted in the translation.

Psychoyos, A.
ACTION OF VARIOUS SUBSTANCES ON THE PRODUCTION OF PSEUDOPREGNANCY IN RATS (Action de Diverses Substances sur le Déclenchement de la Pseudogestation chez la Ratte). [1959] 5p. 8 refs.
Order from SLA mi$1.80, ph$1.80 59-15409

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] (France) 1958, v. 152, 15 Dec, p. 1086-1088.

The substances investigated using rats (experiments not described) are iproniazid, reserpine and/or chlorpromazine. No conclusions are drawn.

Rewald, Enrique.
THE TREATMENT OF MULTIPLE MYELOMA WITH DIETHYLSTILBESTROL. [1959] 8p. (7 figs. omitted) 5 refs.
Order from SLA mi$1.80, ph$1.80 59-15686

Trans. of la Prensa Méd[ica] Argent[ina] 1957, v. 44, [no. 34] p. 2642-2645.

Four case histories. Diethylstilbestrol treatment brought about relief from osseous pain in all patients and an increase of appetite in three.

Roux, Jean Louis.
A CASE OF MEDITERRANEAN BOUTONNEUSE FEVER IN GENEVA. [1959] [9]p. 14 refs.
Order from SLA mi$1.80, ph$1.80 59-15432

Trans. of Rev[ue] Méd[icale de la] Suisse Rom[ande] (Switzerland) 1954, v. 74, no. 1, p. 39-44.

Schwarz, D. and Siebenhaar, C.
A NEW MEDICINAL TREATMENT FOR PARKINSONISM. [1959] 5p.
Order from ATS $8.10 ATS-94L30G

Trans. of Med[izinische] Klin[ik] (Germany) 1955, no. 35, p. 1473-1474.

Shukina, A. M.
CHARACTERISTICS OF THE COURSE OF HYPERTENSION AT A YOUNG AGE. 23 Mar 59, 8p. 2 refs. JPRS: L-709-N.
Order from OTS $0.50 59-13335

Trans. of Sovetskaya Meditsina (USSR) 1958, v. 22, no. 3, p. 37-42.

A clinical study of 250 patients in the early stages of hypertension (237 being neurogenic) ranging in age from 16 to 35, was undertaken. Therapeutic and prophylactic measures recommended include a correct organization of work, rest and recreation, an organization of day and night "prophylacteries" for hypertensive patients where a health regime can be carried out without loss of time from work, and the creation of special cardiologic rest homes in various localities to which the hypertensive patient can periodically retire.

Vasilenko, V. Kh. and Zhukovskiy, M. A.
THE PROSPECT FOR THE DEVELOPMENT OF MEDICAL SCIENCE IN THE USSR IN 1959-1965. 18 May 59, 15p. JPRS: 1583-N.
Order from OTS $0.50 59-13518

Trans. of Klinicheskaya Meditsina (USSR) 1959 [v. 37] no. 1, p. 3-12.

Pharmacology and Toxicology

GLUTATHIONE ENRICHMENT OF YEAST.
21 Apr 59, 2p.
Order from LC or SLA mi$1.80, ph$1.80 59-15607

Trans. Japanese patent spec. 2266, issued 9 Aug 50.

Cysteine is added to a sugar solution, and the yeast is allowed to ferment in this medium at 18° for 4 hr.

PHARMACOLOGY AND TOXICOLOGY, 1958, VOL. 21, NOS. 4,5, P. 317-526. 1959, 2 nos.
Order from CB $10.00 each, $25.00/year

Trans. of Farmakologiya i Toksikologiya (USSR)
1958, v. 21, no. 4, p. 3-[93].
1958, v. 21, no. 5, p. 3-[93].

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR)
1958 (Soviet Abstracts. Biology)
Order from OTS $1.00

Contents:
Section V. Pharmacology and Toxicology.

No. 11, Abstracts 51835-52127, JPRS: 1667-N, 59-13593
No. 14, Abstracts 66186-66484, JPRS: 1692-N, 59-13620
No. 15, Abstracts 71012-71323, JPRS: 1689-N, 59-13614
No. 18, Abstracts 85031-85310, JPRS: 1676-N, 59-13603

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Arendaruk, A. P. and Skoldinov, A. P.
PREPARATION OF TETRACYCLINE. [1959] 3p.
Order from ATS $6.50 ATS-91K24R

Trans. of Med[itsinskaya] Prom[yshlennost' SSSR] 1958, no. 4, p. 14-17.

Barac, G.
ANGIOTENSIN AND ACUTE RENAL DAMAGE PROVOKED BY BURNS, HEATED BLOOD OR ERYTHROCYTES HEMOLYSED IN VITRO BY DISTILLED WATER. (Angiotensine et Atteinte Renale Aigue Provoquée par la Brûlure, le Sang Chauffé ou les Érythrocytes Hémolyses in Vitro par l'Eau Distillé). [1959] 6p. 21 refs.
Order from SLA mi$1.80, ph$1.80 59-15491

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] (France) 1958, v. v. 152, [no. 6] p. 1030-1034.

Synthetic angiotensin, injected i.v., has an antidiuretic action in intact animals. It has a direct vasoconstricting effect on the kidneys. Its inactivation is slowed after nephrectomy, as well as after burns, in spite of the presence of the kidneys. Angiotensin is not identical with renal erythrotonin. It is possible that the vasoconstricting and antidiuretic factors of burns as well as the renal erythrotonins and erythroligurins are structurally close to the polypeptides such as angiotensin.

Bartorelli, C., Gargano, N., and Zanchetti, A.
COMPARATIVE STUDY OF THE SALIDIURETIC ACTION OF HYDROCHLOROTHIAZIDE AND CHLOROTHIAZIDE (Étude Comparative de l'Action Sali-diurétique de l'Hydrochlorothiazide et du Chlorothiazide). [1959] 17p. 12 refs.
Order from SLA mi$2.40, ph$3.30 59-15687

Trans. of Schweiz[erische] Med[izinische] W[ochenschrift] (Switzerland) 1959, v. 89 [no. 12] p. 331-334.

In five normal subjects, fed a constant diet with known Na^+, K^+, Cl^- and H_2O content, the pharmacodynamic activities of hydrochlorothiazide and chlorothiazide were compared. The hydrogenated derivative has been shown to be several times (from 30 to 50 times, depending on the different electrolytes) more active than the parent drug, chlorothiazide, in terms of ratio between equally effective doses. Administration of the former compound in single adequate doses has resulted in urinary excretions of water and electrolytes which are far greater than those following administration of

maximal effective doses of chlorothiazide. Hydrochlorothiazide appears to differ from chlorothiazide from the qualitative standpoint as well, the former drug resembling even more closely the patterns of activity of organic mercurial compounds. The action of the hydrogenated derivative is definitely more protracted than that of chlorothiazide.

Benk, E.
POLYVINYLPYRROLIDON. [1959] 6p.
Order from SLA mi$1.80, ph$1.80 59-15552

Trans. of Chemiker Z[eitung] (East Germany) 1954, v. 78, no. 2, p. 41-42.

Because collidon is compatible with other organic colloids, organic acids, hydrophilic unguent bases and inorganic pigments, a variety of uses are possible, including those of coagulant, bonding agent, stabilizer and binder. Specifically it is suitable as a thickening agent for inks, as a gripping cream for artificial dentures, as a binder for toothpaste, or as a liquid corn remover.

Böhm, Gundo
ACTION ON MUSCLES OF PERCHLORATES, FLUOBORATES, AND FLUOROSULFONATES. [1959] 5p. (12 figs. omitted) Pa-3313.
Order from SLA mi$1.80, ph$1.80 59-15392

Trans. of [Naunyn-Schmiedeberg's] Archiv fllr Experimentelle Pathologie und Pharmakologie (Germany) 1929, v. 146, p. 327-346.

Campanella, Giorgio and Guida, Augusto.
OBSERVATIONS ABOUT A NEW DRUG WITH A "TRANQUILIZING" ACTION: 2- ETHYLCROTONYL-UREA. [1959] 11p. [unimportant parts omitted] 20 refs.
Order from SLA mi$2.40, ph$3.30 59-15684

Partial trans. of Minerva Médica (Italy) 1958, v. 49, no. 19, p. 809-812.

Clinical results in the treatment with 2-ethylcrotonylurea of 49 psychotic patients aged 14 to 75 years at the neurological clinic of the University of Modena are reported. Optimal dose was found to be 700 to 900 mg/day. The drug was found to have definite tranquilizing effects without habit formation or phenomena of intolerance. It is not a muscle relaxant and does not cause arterial hypotension.

Chart, J. J., Renzi, A. A. and others.
COMPARATIVE EXPERIMENTAL STUDIES ON NEW SULFONAMIDES WITH DIURETIC AND SALURETIC ACTION (Vergleichende Experimentelle Untersuchungen über Neue Sulfonamide mit Diuretischer und Saluretischer Wirking). [1959] 30p. 53 refs.
Order from SLA mi$2.70, ph$4.80 59-15597

Trans. of Schweiz[erische] Med[izinische Wochenschrift] (Switzerland) 1959, v. 89 [no. 12] p. 325-331.

During investigation of a number of heterocyclic sulphonamides endowed with a greater degree of diuretic and saluretic activity than chlorothiazide, hydrochlorothiazide proved particularly effective. Tests on rats and dogs showed that under certain experimental conditions hydrochlorothiazide is up to 21 times as potent as chlorothiazide, and that it has a longer duration of effect. In the rat, hydrochlorothiazide inhibits the effect of vasopressin, reserpine, syrosingopine, and adrenalectomy on renal function. It inhibits the sodium-retaining effect of desoxycorticosterone-acetate and aldosterone, and enhances the natriuretic action of prednisolone. Hydrochlorothiazide displays anti-hypertensive properties in a certain form of experimental hypertension known as "adrenal regeneration hypertension". It exerts no influence on high blood pressure induced by hydrocortisone. Hydrochlorothiazide has no demonstrable effect on the gastro intestinal tract.

Chiray, M.
DOCTORS OF OLDENTIME: THE HELVETIUS (A FAMILY BIOGRAPHY). [1959] 5p. [2 figs. omitted] 4 refs.
Order from SLA mi$1.80, ph$1.80 59-15536

Trans. of Paris Médical (France) 1921 [v. 83] no. 42, p. 2-5.

Faynshteyn, B. B. and Ziserman, A. M.
AN IMPROVEMENT IN THE TECHNOLOGY OF THE PRODUCTION OF BIOMYCIN (CHLOROTETRACYCLINE) HYDROCHLORIDE. [1959] 2p.
Order from ATS $3.50 ATS-92K24R

Trans. of Med[itsinskaya] Prom[yshlennost'] SSSR, 1958, no. 4, p. 36.

Gauze, G. F., Kochetkova, G. V., and Vladimirova, G. V.
ACTION OF ANTI-CANCER SUBSTANCES UPON THE BIOCHEMICAL MUTANTS OF MICROORGANISMS WITH IMPARIED OXIDATION, tr. by Paul V. DePorte. 27 Apr 59, 11p. (1 fig. omitted) 9 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-14959

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 124, no. 3, p. 674-677.

Strains of Polytoma uvella were cultured on agar with carcinogenic hydrocarbons. The mutants which developed showed an oxygen consumption reduced to 62% of that of normal cultures. These biochemically influenced strains were used as test objects for the investigation of anti-cancer substances. They were specifically vulnerable to a chlorethylamine preparation, Degranol, to actinomycin C and to "antibiotic 6270", derived from Actinomyces.

Gerstenbrand, F. and Tschabitscher, H.
EXPERIENCES WITH THE ANTIPARKINSON DRUG AKINETON. [1959] 7p.
Order from ATS $9.50 ATS-95L30G

Trans. of Wien[er] Klin[ische] Woch[en]schr[ift] (Austria) 1958, v. 70, no. 15, p. 261-264.

Gross, F. and Turrian, M.
BENZIMIDAZOLE DERIVATIVES WITH STRONG ANALGESIC PROPERTIES. [1959] 4p. 6 refs.
Order from SLA mi$1.80, ph$1.80 59-15435

Trans. of Experientia (Switzerland) 1957, v. 13, no. 10, p. 401-403.

A number of basically substituted benzimadazoles show a strong analgesic activity in mice, rats, rabbits and dogs. Qualitatively they act similarly to morphine, and quantitatively they are superior to analgesics heretofore described.

Imhof, P., Hürlimann, A., and Steinmann, B.
STUDIES OF PERIPHERAL CIRCULATION WITH SYNTHETIC HYPERTENSIN II (Periphere Kreislaufuntersuchungen mit Synthetischem Hypertensin II). [1959] 15p. 8 refs.
Order from SLA mi$2.40, ph$3.30 59-15493

Trans. of Cardiologia (Switzerland) 1959, v. 34 [no. 2] p. 120-130.

The effect of hypertensin II in single i. v. injections or in i. v. continuous drip was examined in 28 persons ranging in age from 14 to 79 yr. Arterial blood pressure was measured continuously by left brachial artery puncture. Rate of the peripheral pulse waves was calculated from the delay of the pulse between the right carotid and right radial arteries respectively. Skin temperature was measured with a Danish Ellab instrument. A transient increase in blood pressure was observed with i. v. injections, the degree depending upon the dose. Tachyphylaxis was not observed. In hypertensive patients the rise in blood pressure was more pronounced and lasted longer than in subjects with normal blood pressure. A certain degree of adaptation to i. v. drip appeared to occur. Hypertensin increased the velocity of the propagation of the pulse wave and altered the shape of the pulse tracing recorded intra-arterially, a certain relation between these two changes being demonstrable.

Jaques, R., Bein, H. J., and Meier, R.
THERAPEUTIC POSSIBILITIES IN INTOXICATION BY PHOSPHORUS-ORGANIC ANTIESTERASES (Therapeutische Möglichkeiten bei Vergiftung durch Phosphororganishe Anti-Esterasen). [1959] 10p. 47 refs.
Order from SLA mi$1.80, ph$1.80 59-15454

Trans. of Schweiz[erische] Med[izinische] Wochenschrift (Switzerland) 1957, v. 87 [no. 34] p. 1076-1098.

The activity of PAM (2-Pyridine-aldoxime-methyliodide) against several commercial insecticides was tested, using male mice weighing 17-21 gm. PAM in aqueous solution was injected i. p. in general 5 min after the cholinesterase toxin had been given subcutaneously. In doses up to the maximal tested (30 mg/kg), PAM is most effective against lethal Systox intoxication, whereas the therapeutic effect of the same dose is somewhat lower against Metasystox and Phosphamidone intoxication and fails against DEP ant TEPP. Under the experimental conditions selected, PAM was ineffective against parathion.

Kuntz, E.
USE OF THE LOW-TOXICITY, BASIC STREPTOMYCES ANTIBIOTICS IN THE TREATMENT OF TUBERCULOSIS (Zur Anwendung der Toxizitäts-geminderten, Basischen Streptomyces-Antibiotika bei der Behandlung der Tuberkulose). [1959] 3p.
Order from SLA mi$1.80, ph$1.80 59-10835

Trans. of unidentified mono. presented at German Society of Internal Medicine, Wiesbaden, 1956.

Losse, H., Wehmeyer, H. and others.
INVESTIGATIONS WITH A NEW SALIDIURETIC (Untersuchungen mit einem Neuen Salidiuretikum). [1959] 15p. 5 refs.
Order from SLA mi$2.40, ph$3.30 59-15891

Trans. of Münch[e]n[er] Med[izinische] W[ochen]-schr[ift] (West Germany) 1959, v. 101, p. 677-680.

Clinical experience in administration of hydrochlorothiazide (Esidrix, Ciba) to 35 hospitalized patients, 16 of whom had circulatory diseases, is reported. The drug promotes the excretion of sodium and chloride in the urine, and to a lesser extent also the potassium excretion. The diuretic effect begins in 2 hr and lasts for at least 24 hr. In several patients with hypertension, a hypotensive effect was observed. The drug is indicated in edematous conditions of various origins and in essential hypertension.

Menke, K. H.
THE SEPARATION OF COBALAMINS BY ION EXCHANGE COLUMNS. 12 Mar 59, 2p. 1 ref.
Order from SLA mi$1.80, ph$1.80 59-15356

Trans. of [die] Naturwissenschaften (Germany) 1958, v. 45, no. 11, p. 263.

Mrch, J. and Mrch, K.
STUDIES ON THE STABILITY OF DRUGS. 11. THE STABILITY OF RESORCINOL EYE-DROPS. [1959] 24p. 8 refs.
Order from SLA mi$2.70, ph$4.80 59-15584

Trans. of Dansk Tidsskr[ift] for Farm[aci] (Denmark) 1958, v. 32, p. 62-74.

Olsuf'yev, N. G.
THE CURRENT STATUS OF THE STUDY OF TULAREMIA VACCINE-PROPHYLAXIS. 18 May 59, 15p. 53 refs. JPRS: L-768-N.
Order from OTS $0.50 59-13470

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1958 [v. 13] no. 11, p. 63-72.

This survey, which is based exclusively on Russian sources, indicates that in the past 12 years the mass prophylaxis of the population of the USSR against tularemia by means of vaccine has fully justified itself. Important results have been obtained in studies of mutations of tularemia bacteria, in the demonstration of antigenic substances of the bacterial cell and their chemical composition, and also in clarification of the peculiar features of immunogenesis following inoculation.

Steinbrecher, W.
AKINETON PSYCHOSES. [1959] 3p.
Order from ATS $5.00 ATS-96L30G

Trans. of Deut[sche] Med[izinische] Woch[en]schr[ift] (West Germany) 1958, v. 83, p. 1399-1400.

Wallenfels, Kurt and Sund, Horst.
ON THE MECHANISM OF THE ACTION OF 3.5-DIOXO-1.2-DIPHENYL-4-n-BUTYL-PYRAZOLIDINE. [1959] 36p. (refs. and summary omitted).
Order from SLA mi$3.00, ph$6.30 59-15595

Trans. of Arzneimittel-Forschung (West Germany) 1959 [v. 9] Feb, p. [81-89].

The effect of butazolidin and its phenolic metabolite on enzyme reactions is discussed, partly with reference to experimental work by the author, partly with reference to a bibliography which is not included. It is suggested that in addition to its inhibiting action on cortisone hydrogenation and glutamic acid synthesis, butazolidin is capable of blocking, by way of the zinc dehydrogenases, the metabolism of particular tissues, with resultant inhibition and final suppression of inflammatory processes.

Radiobiology

Grabovenko, E. K. and Sbitneva, M. F.
THE PROBLEM OF THE THERAPEUTIC ACTION OF STRYCHNINE IN ACUTE RADIATION SICKNESS IN RATS AND MICE. 18 June 59, 2p. JPRS: L-836-N.
Order from OTS $0.50 59-13643

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1959, v. 3, no. 1, p. 71.

Kosmarskaya, Ye. N. and Barashnev, Yu. I.
THE EFFECT OF A SINGLE IRRADIATION WITH X-RAYS ON THE DEVELOPING RAT BRAIN.
23 Mar 59, 13p. (8 figs. omitted) 7 refs. JPRS: L-713-N.
Order from OTS $0.50 59-13341

Trans. of Meditsinskaya Radiologiya (USSR) 1958, [v. 3] no. 2, p. 23-31.

The effect of X-rays was studied on the developing brains of white rats in the early period of post natal life, at an age from birth to 14 days. X-rays produced disturbances of brain growth and improper formation of some of its parts. The traumatic effects of irradiation was manifested in a reduction in size of the cerebral hemispheres and a smaller cerebellum with less convex laminae arranged in less regular fashion than in the control animal. The growth of the vermis of the cerebellum was particularly disturbed. In contrast to the cerebral and cerebellar hemispheres, there were no differences in the size of the lamina quadrigemina of the experimental and control animals but their differentiation into anterior and posterior colliculi was delayed in the irradiated animals. The brain weight of animals irradiated on the 1st to 14th day lagged behind that of the control animals

Morozov, A. I.
THE SURGICAL TREATMENT OF WOUNDS OF SOFT TISSUES IN RADIATION SICKNESS. 25 Mar 59, 3p. JPRS: 1409-N.
Order from OTS $0.50 59-13353

Trans. of Vestnik Rentgenologii i Radiologii (USSR) 1958, v. 33, no. 2, p. 86-87.

Laceration and puncture injuries involving the skin, fascia and muscles were inflicted near the pelvic girdle of rabbits of both sexes after irradiation doses of 250 to 1000 r. In the 1st series of experiments, surgical treatment of the wounds was performed after 6 hr, using primary sutures for closure. In the 2nd series primary sutures were applied after 12 hr. In the 3rd series delay-primary sutures were applied 4 to 5 days after surgical treatment which followed injury by 24 hr, with a drain of the wounds for one or two days. The time of surgical treatment of wounds was found definitely to influence the healing time so that delayed treatment caused slow, difficult healing.

Stepanova, M. M. and Ivanov, I. I.
THE PROBLEM OF THE METABOLISM OF VITAMIN C AND AROMATIC AMINO ACIDS IN RADIATION SICKNESS. 16 Mar 59, 5p. 8 refs.
JPRS: L-692-N.
Order from OTS $0.50 59-13300

Trans. of Voprosy Meditsinskoy Khimii (USSR) 1958, v. 4, no. 5, p. 370-372.

Experiments were performed on guinea pigs weighing 300 to 400 grams in weight. The animals were divided into three groups. One group consisting of three guinea pigs was on rations which excluded vegetables. The second group consisting of seven animals received the same rations but with the addition of cabbage (ad libitum); these were irradiated with a lethal dose of X-Rays. The third group (the control) consisted of three healthy guinea pigs, which like the animals of the second group, received rations with the addition of cabbage. All the animals were given l-tyrosine by mouth in quantities of 300 to 700 milligrams. After the administration of tyrosine the animals were put in metabolism chambers for the purpose of collecting the urine. On the following day, the chambers were washed out with distilled water, the volume of urine was measured (together with the wash water), the urine was filtered and the content of homogentisic acid in it was determined by the method of Briggs (J. Biol. Chem. 51:451, 1922). Homogentisic

acid was found in the urine of guinea pigs on a diet inadequate with respect to vitamin C, and was not found in the urine of guinea pigs which were on ordinary rations and irradiated with a lethal dose of X-Rays. In radiation sickness, no serious disturbances were observed in the metabolism of the aromatic amino acids nor marked changes in the vitamin C metabolism. The occurrence of hemorrhages and the disturbance of the procollagen synthesis in the skin in radiation sickness evidently have other etiologies than vitamin C deficiency.

Zhakhova, Z. N. and Braun, A. D.
CREATINURIA IN NON-GRAVID AND GRAVID RATS AFTER THE ACTION OF PENETRATING RADIATION (Kreatinuriya u Neberemennykh i Beremennykh Krys Posle Vozdeystviya Pronikayuschego). [1959] 8p. (3 figs. omitted) 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3580

Trans. of Meditsinskaya Radiol[ogiya] (USSR) 1956, v. 1, no. 3, p. 80-85.

To determine the status of creatine metabolism during radiation sickness, 90 rats, of which 35 were gravid, were subjected to whole body x-radiation in dosages of 500 r, then maintained on a diet containing practically no creatine. The 24 hr urine was collected and the creatine excretion increased 24 hr after irradiation and reached a peak 5 times that of normal non-irradiated animals during the second 24 hr period. On the 6th day of radiation sickness creatine excretion returned to normal levels. In gravid animals, a small but significant increase in creatine excretion was observed on the 9th and 18th days of pregnancy and on the day of delivery, which was 1 to 3 days later than is normal. On other days there was no difference in the excretion of the gravid and non-gravid animals. The level of creatinuria was significantly higher in rats irradiated in the final stage of pregnancy as compared to the level in rats irradiated on the 11th and 12th days of pregnancy.

Surgery

Perret, L.
CÉSAR ROUX. [1959] 10p. (2 photos omitted).
Order from SLA mi$1.80, ph$1.80 59-15476

Trans. of Revue Médicale de la Suisse Romande (Switzerland) 1927, v. 47, p. 121-133.

Picot-Roux, L. and Hase, Ottheinrich.
EPICRISIS ON THE FIRST OPERATION OF PRETHORACIC ESOPHAGOPLASTY: SURGICAL PORTION (ESOPHAGOJEJUNOGASTROSTOMOSIS) [AND] ANATOMICAL PART (Epicrise de la Première Opération de l'Oesophagoplastie Préthoracique) [1959] 9p. 16 refs.
Order from SLA mi$1.80, ph$1.80 59-15475

Trans. of Rev[ue] Méd[icale] de la Suisse Rom[ande] (Switzerland) 1950, v. 70, p. 19-28.

Roux, César.
ESOPHAGOJEJUNOGASTROSTOMOSIS, A NEW OPERATION FOR IMPASSABLE STRICTURE OF THE ESOPHAGUS (L'Oesophago-Jéjuno-Gastrostomose, Nouvelle Opération pour Rétrécissement Infranchissable de l'Oesophage). [1959] 5p. (6 figs. omitted) 1 ref.
Order from SLA mi$1.80, ph$1.80 59-15609

Trans. of Semaine Médicale (France) 1907, v. 27, p. 37-40.

Vulliet, H.
TO CÉSAR ROUX. HOMAGE OF HIS PUPILS (À César Roux. Hommage de ses Élèves). [1959] 7p.
Order from SLA mi$1.80, ph$1.80 59-15548

Trans. of Revue Médicale de la Suisse Romande (Switzerland) 1915, v. 35 [no. 11] p. 605-615.

Zoology

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 20 (Soviet Agstracts. Biology). 8 June 59, 46p. JPRS: 1664-N.
Order from OTS $1.00 59-13590

Contents:
Section G. Zooparasitology. Abstracts 90988-91106.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology)
Order from OTS $1.00

Contents:
Section P. General and Specialized Zoology. Insects.

No. 17, Abstracts 78142-78398, JPRS: 1697-N, 59-13628
No. 18, Abstracts 82792-83034, JPRS: 1649-N, 59-13572

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

CHEMISTRY

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIVISION OF CHEMICAL SCIENCE, 1958, VOL 22, NOS.3, 4. 1959, 2 nos.
Order from CB $5.00 each, $45.00/year

Trans. of Akademiya Nauk SSSR. Otdeleniye Khimicheskikh Nauk. Izvestiya
1958, no. 3, p. 257-[381].
1958, no. 4, p. 285-[521].

JOURNAL OF APPLIED CHEMISTRY OF THE USSR, 1958, VOL. 31, NOS. 4-6. 1959. 3 nos.
Order from CB $7.50 each, $60.00/year

Trans. of Zhurnal Prikladnoy Khimii (USSR)
1958, v. 31, no. 4, p. 517-[667].
1958, v. 31, no. 5, p. 669-[813].
1958, v. 31, no. 6, p. 817-[967].

JOURNAL OF GENERAL CHEMISTRY OF THE USSR, 1958, VOL. 28, NOS. 3, 4, P. 555-1087. 1959, 2 NOS.
Order from CB $10.00 each, $90.00/year

Trans. of Zhurnal Obshchey Khimii (USSR)
1958, v. 28, no. 3, p. 569-[839].
1958, v. 28, no. 4, p. 845-[1120].

PROCEEDINGS OF THE ACADEMY OF SCIENCES OF THE USSR. CHEMISTRY SECTION, 1958, VOL. 121, NOS. 1-6. 1959, 1v.
Order from CB $25.00, $110.00/year

Trans. of Akademiya Nauk SSSR. Doklady. [Khimiya]
1958, v. 121, nos. 1-6.

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1958, 1959 (Soviet Abstracts. Chemistry)
Order from OTS $1.00 each

Contents:
Section D. Cosmochemistry, Geochemistry, Hydrochemistry
Section E. Analytical Chemistry
Section F. Laboratory Equipment

1958, no. 15, Abstracts 49847-50141, JPRS: 1701-N, 59-13634
1959, no. 4, Abstracts 11385-11628, JPRS: 1716-N, 59-13656

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1958, NO. 22 (Soviet Abstracts. Chemistry. 16 Feb 59, 102p. JPRS(NY)-1262
Order from OTS $1.00 59-13209

Contents:
Section H. Chemical Technology. Abstracts 74847-76078.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia excluding the Soviet Union.

USPEKHI KHIMII (USSR) 1958, V. 27 (Progress of Chemistry)
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 9, p. 1025-1175, PB 141 070T-11
No. 10, p. 1177-1256, PB 141 070T-12

Consists of abstracts in English.

Analytical Chemistry

JOURNAL OF ANALYTICAL CHEMISTRY OF THE USSR, 1958, VOL. 13, NO. 4, P. 433-568. 1959, 1v.
Order from CB $20.00, $80.00/year

Trans. of Zhurnal Analiticheskoy Khimii (USSR) 1958, v. 13, no. 4, p. 379-[504].

Dietrichs, H[ans] H[ermann] and Sandermann, W[ilhelm].
STUDIES IN THE FIELD OF WOOD-PRESERVING CHEMISTRY. PART VIII. PAPER CHROMATOGRAPHY AND ANALYSIS OF WOOD PRESERVATIVES (Studien auf dem Gebiete der Holzschutzchemie. Achte Mitteilung: Papierchromatographie und Analyse von Holzschutzmitteln). [1959] [15]p. 39 refs. Trans. no. 4261.
Order from SLA mi$2.40, ph$3.30 59-15361

Trans. of Holz als Roh- und Werkstoff (West Germany) 1958, v. 16, no. 9, p. 340-346.

Paper chromatographic methods permits an easy separation of the compounds used for wood preservatives as well as their determination by the values of the retention factors. A number of chlorinated agents, phenols and tar oil constituents could be separated and qualitatively analysed by a solvent mixture of methanol and heptane. Paper chromatographic determinations of U- and UA-salts and of sublimate are given as examples. Compounds that have been separated by paper chromatography can easily be determined semiquantitatively by squaring, as is demonstrated in the case of naphthol. Thus advantageous possibilities for the analysis of wood preservatives are offered in many cases where traditional methods employed so far required much more time and work.

Grigor'yev, P. N. and Pozharskaya, P. I.
DETERMINATION OF SILICA IN THE PRESENCE OF ORGANIC COLLOIDS. [1959] 3p.
Order from ATS $4.60 ATS-48L29R

Trans. of Zavodskaya Lab[oratoriya] (USSR) 1936, v. 5, p. 1443-1444.

Hahn, F. L.
END POINT DETERMINATION BY INTERPOLATION FOR POTENTIOMETRIC MICROANALYSES. [1959] 6p.
Order from ATS $8.95 ATS-34L31G

Trans. of Mikrochim[ica] Acta (Austria) 1958, no. 3, p. 395-401.

Kortüm, G. and Seiler, M.
CRITICAL SELECTION OF COLORIMETRIC, SPECTROPHOTOMETRIC AND SPECTROGRAPHIC METHODS FOR ABSORPTION MEASUREMENT (Die Krit. Auswahl Colorimetr., Spektralphotometr. u. Spektrograph. Methoden z. Absorptionsmessung). [1959] [20]p. 41 refs.
Order from SLA mi$2.40, ph$3.30 59-15148

Trans. of Angewandte Chemie (Germany) 1939, v. 52, no. 48, p. 687-693.

Contents:
Fundamental considerations on absorption measurement
Range of validity of Lambert-Beer law
Principle of various methods and reproducibility of individual measurements
Subjective colorimetry
Objective colorimetry
Subjective spectrophotometry
Objective spectrophotometry
Spectrography

Kuhn, W., Narten, A., and Thürkauf, M.
CONTINUOUS GAS CHROMATOGRAPHY. [1959] [22]p. 2 refs.
Order from SLA mi$2.70, ph$4.80 59-15335

Trans. of Helv[etica] Chim[ica] Acta, 1958, v. 41, no. 7, p. 2135-2149.

A process is described which permits the continuous separation of a multicomponent mixture in a single operation. In this process the mixture of the components is distributed between two phases moving countercurrently and exchanging material. Along the stream of the two phases moving countercurrently, a temperature gradient is maintained. It is shown that in view of the temperature dependence of the distribution coefficients, the effective mass transport for a specific and individual component of the mixture disappears at specific temperatures i.e., at specific points of the stream. As a result, the components concentrate at these places individually and can be withdrawn from these points in the form of separated substances.

Mejbaum, Wanda.
MEASURING SMALL QUANTITIES OF PENTOSE, ESPECIALLY IN DERIVATIVES OF ADENYLIC ACID (Über die Bestimmung Kleiner Pentosemengen...) [1959] [4]p. 4 refs.
Order from SLA mi$1.80, ph$1.80 59-15417

Trans. of Hoppe-Seyler's Zeit[schrift für] Physiol[ogische] Chemie (Germany) 1939, v. 258, p. 117-120.

Mikhaylova, G. V., Turovtseva, Z. M., and Zhalitov, R. Sh.
DETERMINATION OF OXYGEN, HYDROGEN, AND NITROGEN IN MOLYBDENUM, TUNGSTEN, AND NIOBIUM. [1959] 9p. 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15486

Trans. of *Zhurnal Analiticheskoy Khimii (USSR) 1957, v. 12, no. 3, p. 338-341.

Patzak, R. and Doppler, G.
THE DETERMINATION OF CHROMIUM, IRON AND ALUMINUM WITH ETHYLENEDIAMINETETRAACETATE IN THE SIMULTANEOUS PRESENCE OF ALL THREE CATIONS. [1959] 8p.
Order from ATS $11.95 ATS-02L31G

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (West Germany) 1957, v. 156, p. 248-257.

Sokol, L.
ANALYSIS OF PHENOLS AND HYDROCARBONS BY GAS-LIQUID CHROMATOGRAPHY. [1959] 11p.
Order from ATS $15.75 ATS-53L31C

Trans. of Chem[icke] Listy (Czechoslovakia) 1958, v. 52, p. 1726-1734.

Vorobjov, V.
ANALYTICAL EVALUATION OF HIGHER PHENOLIC FRACTIONS OF COAL TARS FROM THE STANDPOINT OF PHENOL-FORMALDEHYDE RESIN PRODUCTION. [1959] 3p.
Order from ATS $4.95 ATS-07L31C

Trans. of Chem[icky] Prumysl (Czechoslovakia) 1958, v. 8(33) no. 1, p. 50-51.

Widmer, G.
QUANTITATIVE DETERMINATION OF UREA AND MELAMINE IN MIXTURES OF UREA-FORMALDEHYDE AND MELAMINE-FORMALDEHYDE CONDENSATION PRODUCTS. [1959] 9p.
Order from ATS $10.95 ATS-47L31G

Trans. of Kunststoffe (West Germany) 1956, v. 46, no. 8, p. 359-362.

Inorganic Chemistry

Baumgarten, Paul and Bruns, Werner.
THE REACTION OF BORON FLUORIDE WITH BORON TRIOXIDE, BORATES, CARBONATES AS WELL AS NITRATES AND SOME INFORMATION ABOUT A PRESUMABLE BORON OXY FLUORIDE. [1959] 14p. [1 illus. omitted] 9 refs.
Order from SLA mi$2.40, ph$3.30 59-15363

Trans. of Chemische Berichte (West Germany) 1939, 72B [no. 6] p. 1753-1762.

Dergunov, E. P.
COMPLEX FORMATION BETWEEN ALKALI METAL FLUORIDES AND METAL GROUPS. [1959] [5]p. 6 refs.
Order from LC or SLA mi$1.80, ph$1.80
AEC-tr-2022

Trans. of Akademiya Nauk SSSR. Doklady, 1948, v. 60 [no. 7] p. 1185-1188.

State diagrams showed that (1) the ability to form cryolite-type complexes decreases from aluminum to lanthanum, in conformity with the increase in ionic radius of the metal included in the central nucleus—Al^{+3} (0.57 A)—Y^{+3}(1.06 A)—La^{+3}(1.22 A); and (2) the thermal stability of the complexes and the tendency to complex formation for systems with given anion increase with increasing ionic radius of the alkali metal occuring outside the complex nucleus from lithium to cesium—Li^{+}(0.78 A)—Ma^{+}(0.98 A)—K^{+}(1.33 A)—Rb^{+}(1.49 A)—Cs^{+}(1.65 A). Both these regularities completely conform to the well-known rule of van Arkel concerning the tendency to complex formation and stability of complexes of salt systems in relation to the value of the ionic radius, that the effect of the cation is usually stronger than that of the anion, since the cation is always smaller in size and frequently has a greater charge. The fundamental factors that determine the possibility of formation of cryolite-type complex compounds and their stability in systems of alkali metal fluorides with aluminum, yttrium, and lanthanum fluorides are ionic dimensions, polarizing effects, and polarizability.

Mirkin, I. A.
PREPARATION OF POTASSIUM NITRATE BY THE ACTION OF NITRIC ACID OR NITROGEN OXIDES ON THE CHLORIDE. [1958] [24]p. 17 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-10738

Trans. of [Khimicheskaya Promyshlennost'] (USSR) 1931, v. 8, p. 351-359.

The interaction of nitric acid as well as that of nitrogen oxides and potassium chloride was investigated. Experiments carried out with nitric acid showed that the higher the ratio of HNO_3 to KCl the higher the purity of the potassium nitrate obtained. The limiting ratio of HNO_3 : KCl where pure potassium nitrate is produced is dependent on the temperature and on the concentration of the acid used. The higher the temperature and lower the concentration of the acid the lower the ratio HNO_3 : KCl where pure KNO_3 is obtained. The composition and the amount of gases which separate in the interaction of nitric acid and potassium chloride depends to a great extent upon the temperature and upon the concentration of the nitric acid used. Concentrated nitric acid and high temperature induce the formation of NOCl which causes losses in nitric acid amounting to 10% of the total nitrogen for a 65% acid at 60°C. When using a 30% nitric acid and a temperature not exceeding 60°C, the gaseous phase is almost entirely absent. Experiments carried out with the decomposition of KCl by nitrogen oxides indicated that the yield of potassium nitrate increases with the increase of the moisture of the salt. The degree of utilization of nitrogen ozides increases in the proportion 10 : 6 : 4 when passing the gases consecutively thru three tubes charged with KCl in powder having a grain size of 0.25 to 0.5 mm. In case of small amount of moisture and of concentrated nitrogen oxides simultaneously with the formation of potassium nitrate chlorine or more correctly nitrosyl chloride is produced. In case of a sufficient amount of moisture and low concentration of nitrogen oxides formation of NOCl was not observed.

Nekrasov, L. I. and Skorokhodov, I. I.
THE EXISTENCE OF A HIGHER PEROXIDE OF HYDROGEN. [1959] 3p.
Order from ATS $5.00 ATS-61L31R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1956, v. 30, no. 5, p. 1189-1190.

Saslawsky, J. J., Standel, E. G., and Towarow, W. W.
VOLUME CHANGES DURING NEUTRALIZATION. [1958] [12]p. 10 refs.
Order from SLA mi$2.40, ph$3.30 AEC-tr-3513

Trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (East Germany) 1929, v. 180, p. 241, 251.

The volume change, which occurs during neutralization of acid and base solutions, was experimentally determined in five systems KOH-CH_3COOH, NaOH-CH_3COOH, NaOH-HNO_3, NH_3-HNO_3 and NaOH-H_2SO_4 at different concentrations and with various precentages of the components. In every case the maximum volume change corresponds to the formation of the neutral salt.

Wiberg, Egon and Bauer, Richard.
NOTE ON MAGNESIUM-ALUMINUM-HYDRIDE, $Mg(AlH_4)_2$. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 59-15156

Trans. of Zeitschrift für Naturforschung (West Germany) 1950, v. 5B [no. 7] p. 397-398.

A process is described for the preparation of an ether solution of magnesium aluminum hydride, $MgH_2 \cdot 2 AlH_3 = Mg(AlH_4)2$, which is similar in its reducing properties to the ether solution of $LiH \cdot AlH_3 = Li(AlH_4)$, by the reaction of magnesium bromide with lithium aluminum hydride or of magnesium hydride with aluminum chloride in ether.

Organic Chemistry

CATALYST FOR PRODUCTION OF ISOPROPENYL ACETATE. [3 Apr 59] 9p.
Order from RIS $18.25 RIS rept. 96883

Trans. of German patent application W 18 842 (12o, 19/03) DAS 1 014 104, filed 13 Apr 56, pub. 22 Aug 57, by Wacker-Chemie G.m.b.H., Munich.

A process is described for producing isopenyl acetate by reaction of acetone with ketene at temperatures

between 56 and 96°C in the presence of an acidic catalyst. A polyphosphoric acid obtained by dissolution of diphosphorus pentoxide in commercial, approximately 85% phosphoric acid serves as catalyst.

EASILY PLASTICIZABLE VINYL CHLORIDE SUSPENSION POLYMERS. [28 Nov 58] 4p.
Order from RIS $6.50 Rept. 6498

Trans. of German patent application F 20 372 (39c, 25/01) DAS 1 021 165, by Farbwerke Hoechst A. G., Frankfurt, filed 24 May 56, pub. 19 Dec 57.

A new process is described for manufacturing easily plasticizable vinyl chloride suspension polymers. The suspension polymerization is effected in the presence of small amounts of a saturated hydrocarbon which boils between -110° and +150°C. Preferably, 3 to 12% of the hydrocarbon is used with a monomeric vinyl chloride. The hydrocarbon may be propane, n-butane, n-pentane and 2-methylbutane. The products are useful for making electrical parts, electrical insulation or transparent articles.

METAL-ORGANIC TITANIUM COMPOUNDS. [3 Apr 59] 11p. 3 refs.
Order from RIS $22.75 RIS rept. 97000

Trans. of German patent application F 20 038 (12o, 25) DAS 1 037 446, filed 13 Apr 56; pub 28 Aug 58, by Farbwerke Hoechst A. G., Frankfurt.

A process is described for preparing metal-organic titanium compounds. Titanium compounds of the general formula $(R_1)_2TiX_2$, where R_1 represents a cyclopentadienyl or alkylcyclopentadienyl radical and X halogen, cyano, thiocyano, alkoxy or another acid radical, are reacted in conventional fashion with alkyl metals of elements of Groups IA or IIA or IIB of the periodic system or of aluminum, preferably so in the presence of an inert diluent. Titanium compounds of above general formula, where X represents halogen and/or alkoxy radicals, are reacted with methyl compounds of Group IA or IIA at temperatures below 0°C.

PROCESS FOR THE PREPARATION OF PRIMARY AMINES. [1959] 5p.
Order from ATS $8.00 ATS-95K25G

Trans. of German patent 848,044, granted 3 July 52, pub. 1 Sep 52.

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1959, NO. 2 (Soviet Abstracts. Chemistry). 3 June 59, 13p. JPRS: 1675-N.
Order from OTS $1.00 59-13602

Contents:
Section G. Organic Chemistry. Abstracts 4834-4898.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Alekseyeva, K. A. and Moldavskiy, B. L. CONVERSION OF PHENOLS DURING VAPOR-PHASE HYDROGENATION. [1959] 8p.
Order from ATS $9.85 ATS-52L31R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1959, v. 4, no. 1, p. 43-48.

Arbuzov, A. Ye. and Krasil'nikova, Ye. A. CONCERNING THE ACTION OF TRIARYLMETHYL HALIDES ON THE SILVER SALTS OF DIALKYL HYDROGEN PHOSPHITES. [1959] 6p.
Order from ATS $7.50 ATS-48L31R

Trans. of *Akad[emiya] Nauk SSSR. Otdel[eniye] Khim[icheskikh] Nauk. Izvest[iya] 1959, no. 1, p. 30-34.

Arbuzov, A. Ye. and Abramov, V. S. CONCERNING THE PROBLEM OF THE ACTION OF HALOGEN SUBSTITUTED ETHERS ON SALTS OF DIALKYL HYDROGEN PHOSPHITES. [1959] 8p.
Order from ATS $7.50 ATS-49L31R

Trans. of *Akad[emiya] Nauk SSSR. Otdel[eniye] Khim[icheskikh] Nauk. Izvest[iya] 1959, no. 1, p. 35-40.

Bakh, N. A. and Sarayeva, V. V. OXIDATION PROCESSES IN ORGANIC SYSTEMS UNDER THE EFFECTS OF IONIZING RADIATIONS. [1959] 14p. 28 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15305

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1958, v. 32 [no. 2] p. 209-218.
Another translation is available from ATS $14.95 as ATS-93K26R [1958] 11p.

Batzer, H[ans] and Nisch, A[nton]. INVESTIGATIONS TO EXPLAIN THE STRUCTURE OF POLYVINYL CHLORIDE (Untersuchungen zur Strukturaufklärung des Polyvinylchlorides). [1959] [19]p. 26 refs. (4 tables omitted).
Order from SLA mi$2.40, ph$3.30 59-15945

Trans. of Makromolekulare Chemie (Switzerland) 1957, v. 22 [no. 1/2] p. 131-146.

After fractionation of polyvinyl chloride prepared by different methods, these fractionations were partially and completely reduced through lithium aluminum hydride. By complete reduction under nitrogen, a paraffin with a softening point 118°C was obtained. Polymer analog products were obtained by partial reduction under nitrogen, in presence of oxygen the chain length is reduced. Hydroxyl groups were found in products with reduced chain length. A possible

explanation of this hydroxyl groups is discussed. Viscosity relation was found to be the same for all polyvinyl chloride types.

Berlin, A. A., Popova, G. L., and Isayeva, E. F.
CONDENSATION TELOMERIZATION AND A NEW TYPE OF UNSATURATED POLYESTERS (POLYESTER ACRYLATES). 10 Feb 59, [7]p. 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15501

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, v. 123 [no. 2] p. 282-284.

A study of the polymerization of dimethacrylic (sic), allylmethacrylic (sic), and carboxyallylmethacrylic (sic) esters of glycols showed that the polymerization rate increases with increase in the distance between the double bonds. The condensation telomerization reaction was fastest and yielded the most polyester acrylates when 2 to 3% sulfuric or p-toluenesulfonic acid were used in the presence of hydroquinone.

Danusso, F., Calcagns, B., and Sianesi, D.
STEROSPECIFIC POLYMERIZATION OF STRYENE. ARTICLE V. EFFECT OF TEMPERATURE ON CATALYSIS BY $Al(C_2H_5)_3$ AND $TiCl_4$. [1959] 23p. 6 refs.
Order from SLA mi$2.70, ph$4.80 59-15033

Trans. of la Chimica e l'Industria (Italy) 1959, v. 41, [no. 1] p. 13-18.

Farina, M. and Ragazzini, M.
THE POLYMERIZATION OF ETHYLENE WITH SOLUBLE ALCOHOLATES. [1959] [9]p. 6 refs.
Order from SLA mi$1.80, ph$1.80 59-15226

Trans. of [la] Chimica e l'Industria (Italy) 1958, v. 40 [no. 10] p. 816-819.
Another translation is available from SLA mi$2.40, ph$3.30 as 59-10170 [1959] [11]p.

The polymerization of ethylene to linear high polymers has been studied by using hydrocarbon-soluble catalysts prepared from compounds of transition metals and metal-organic compounds. The type of reaction is strictly dependent upon the experimental conditions, particularly on the Al/Ti ratio, and on the method of preparation of the catalyst.

Fischer, E. O[tto] and Seus, D[ietlinde].
THE STRUCTURE OF CHROMIUM PHENYL COMPOUNDS. AROMATIC COMPLEXES OF METALS VI (Zur Frage der Struktur der Chrom-phenyl-Verbindungen. Uber Aromatenkomplexe von Metallen VI). [1959] [12]p. 17 refs.
Order from SLA mi$2.40, ph$3.30 59-15934

Trans. of Chemische Berichte (West Germany) 1957, v. 89 [no. 8] p. 1809-1815.

Furukawa, Junji, Tsuruta, Teiji and others.
VINYL POLYMERIZATION BY ORGANOBORON COMPOUNDS--COCATALYTIC ACTION OF OXYGEN AND OXYGEN COMPOUNDS. [1959] 28p. 42 refs.
Order from SLA mi$2.70, ph$4.80 59-15495

Trans. of Kogyo Kagaku Zasshi (Japan) 1958, v. 61, no. 6, p. 728-734.

Trialkyl borons polymerize vinyl compounds well, and the polymerization speed is greater the more electrically positive the vinyl group in the compound. In trialkyl boron-catalyzed polymerizations, oxygen or oxygen compounds have considerable promoter action. Various types of organoboron compounds were synthesized besides trialkyl borons, and their polymerization-catalyzing actions were examined. The catalyst activities appeared to be more or less parallel to the electron density over the boron atom.

Golovchinskaya, E. S., Fedosova, V. M., and Cherkasova, A. A.
THIRD PREPARATION OF 8-(TRICHLORMETHYL)-THEOBROMINE AND THEOBROMINE. 1 Mar 59, 7p. 11 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15758

Trans. of *Zhurnal Prikladnoy Khimii (USSR) 1958, v. 31, no. 8, p. 1241-1245.

8-(Trichlormethyl)-theobromine can be prepared with a good yield by adding 3.1 mole of trichlorine to a suspension of 1 mole of 8-methyltheobromine in tridichlorethane. The reaction should be carried out at 60° in the presence of small amounts of aluminum chloride or crystalline iodide. The conversion of 8-(trichlormethyl)-theobromine into theobromine can be realized by heating with diluted hydrochloric acid (instead of water), thus reducing considerably the reaction mass volume during hydrolysis.

Kir'yalov, N. P.
THE STRUCTURE OF PALUSTROL (Stroyeniye Palyustrola) tr. by E. Feigl. [1959] [9]p. 4 refs.
Trans. no. 2979.
Order from LC or SLA mi$1.80, ph$1.80 59-15044

Trans. of *Zhurnal Obshchey Khimii (USSR) 1954, v. 24 [no. 7] p. 1271-1276.

A proof is presented that palustrol is the levorotatory diastereomer of ledol.

Krongauz, E. S. and Suprun, A. P.
A BRIEF SURVEY OF THE RESEARCHES ON ISOTACTIC POLYMERS. [1959] 31p.
Order from ATS $29.75 ATS-75L31R

Trans. of Uspekhi Khim[ii] (USSR) 1958, v. 27, no. 9, p. 1056-1083.

Madayeva, O. S.
SOME PROPERTIES OF 17-OXYSTEROID N-TOLUOSULFOACID ETHERS. VI. SYNTHESIS OF 17, 17-DIMETHYL-18-nor-$\Delta^{5,12}$-ANDROSTADIENOL-3. [1959] 7p. 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15735

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1956, v. 26, p. 3198-3201.

The dehydration of 17α-methyl-Δ^5-androstendiol-3β,17 yields 17,17-dimethyl-18-nor-$\Delta^{5,12}$-androstadienol-3β.

Madayeva, O. S. and Sheinker, Yu. N.
SOME PROPERTIES OF 17-OXYSTEROID N-TOLUOSULFOACID ETHERS. VII. INFRA-RED SPECTRA OF SOME DERIVATIVES OF THE ANDROSTANE AND 18-NOR-ANDROSTANE SERIES. [1959] 8p. 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15736

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1956, v. 26 [no. 11] p. 3201-3206.

Infra-red spectra were obtained for 8 derivatives of the androstane and 18-nor-androstane series. The fission of N-toluosulfoacid from Δ^5-androstendiol-3β,17β,17-tozilate 3-acetate takes place with a retropinacolylic rearrangement and the formation, in the main, of a compound with a bi-tertiary double bond, 17-methyl-18-nor-androstadienol-3β acetate (II), with the admixture of an isomer, 17-methyl-18-nor-^{5,12}-androstadienol-3β acetate (III) with a binary-tertiary double bond. The introduction of methyl groups in the 17 position in an androstanol-3β molecule is not significantly reflected in the infra-red spectra of the compounds involved.

Mayranovskiy, S. G., Faynzil'berg, A. A. and others.
THE EFFECT OF NEGATIVE GROUPS ON THE ELECTROCHEMICAL REDUCTION OF THE CARBON-HALOGEN IN ORGANIC COMPOUNDS. THE POLAROGRAPHIC BEHAVIOR OF HALONITROALKANES. [1959].
Order from ATS ATS-01L32R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 125, no. 2, p. 351-353.

Mel'nikov, N. N., Mandel'baum, Ya. A. and Zaks, P. G.
FROM THE FIELD OF ORGANIC INSECTOFUNGICIDES. XXXVIII. THE REACTION OF THIOPHOSPHORYL CHLORIDE AND ALKYL DICHLOROTHIOPHOSPHATES WITH ALCOHOLS. [1959] 6p.
Order from ATS $6.95 ATS-66L31R

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1958, v. 29, no. 2, p. 522-526.

Nagao, Hideo [Uchida, Moriya, and Yamaguchi, Teruo].
ADSORPTION OF MONOMER IN THE POLYMERIZATION OF ACRYLONITRILE. [1959] 12p. 11 refs.
Order from SLA mi$2.40, ph$3.30 59-15275

Trans. of Kogyo Kagaku Zasshi (Japan) 1956, v. 59 [no. 6] p. 695-698.

A study was made of the adsorption by the polymer of monomer and the aqueous-solution polymerization of acrylonitrile. At the time of polymerization a large quantity of monomer was adsorbed by the polymer. The monomer adsorption took on the form of polymerization. The polymerization strongly resembled bulk polymerization. Moreover, in the adsorption of monomer by the polymer with high polymerization temperature, the quantity of catalyst is small and the catalyst was large as the quantity of water was increased.

Natta, G., Mazzanti, G. and others.
THE COPOLYMERIZATION OF ETHYLENE WITH THE ALIPHATIC ALPHA-OLEFINS. NOTE IV. ETHYLENE-PROPYLENE COPOLYMERIZATION WITH CATALYSTS PREPARED FROM VANADIUM TRICHLORIDE. [1958] 18p. 8 refs.
Order from SLA mi$2.40, ph$3.30 59-10989

Trans. of [la] Chim[ica] e [l'] Ind[ustria] (Italy) 1958, v. 40, no. 9, p. 717-724.
Another translation is available from ATS $12.95 as 14K27I [1958] 12p.

Under favorable laboratory conditions it is possible to prepare ethylene-propylene copolymers of high molecular weight, free of homopolymers, by using catalysts prepared from vanadium trichloride and trialkyl aluminum. The present note describes the characteristics of copolymers thus obtained and the influence, on the composition of the reaction products, of the different parameters involved in the preparation of the catalyst. Variations encountered in the composition of the copolymers, when the composition of the monomer mixture is varied, are also examined, and the reactivity ratios of ethylene and propylene are determined.

Natta, G. [Mazzanti, G.] and others.
COPOLYMERIZATION OF ETHYLENE WITH ALIPHATIC α-OLEFINS. NOTE IV. ETHYLENE-PROPYLENE COPOLYMERIZATION WITH CATALYSTS PREPARED FROM VANADIUM TRICHLORIDE. [1959] [19]p. 8 refs.
Order from SLA mi$2.40, ph$3.30 59-15642

Trans. of la Chimica e l'Industria (Italy) 1958, v. 40, p. 717-724.
Other translations are available from SLA mi$2.40, ph$3.30 as 59-10989 [1958] 18p. and ATS $12.95 as ATS-14K27I [1958] 12p.

It is possible, under favorable experimental conditions, to prepare ethylene-propylene copolymers of high molecular weight that are free from homopolymers, by employing catalysts prepared from vanadium trichloride and aluminum trialkyls. This note describes the characteristics of copolymers thus

prepared, and the influence of several variables in the preparation of the catalyst on the composition of the reaction product. In addition, the variation of the composition of the copolymers resulting from a change in the composition of the monomer mixture is examined, and the "reactivity ratios" of ethylene and propylene are determined.

Natta, G. [Pasquon, I. and Giachetti, E.]
KINETICS OF PROPYLENE POLYMERIZATION WITH HIGHLY STEREOSPECIFIC HETEROGENEOUS CATALYSTS. PART I. OVERALL KINETICS OF POLYMERIZATION PROCESS. [1959] [20]p. 36 refs.
Order from SLA mi$2.40, ph$3.30 59-15512

Trans. of la Chimica e l'Industria (Italy) 1957, v. 39, no. 12, p. 993-1001.

The kinetic study of propylene polymerization to isotactic polymer (having a high percentage of crystallinity) in the presence of highly stereospecific catalyst systems, such as the system $Al(C_2H_5)_3$ and crystalline $TiCl_3$ (violet modification), has shown that the reaction velocity, as a function of time, shows two distinct periods: the first (induction period) having velocity increasing with time, the second (steady state period) with a constant velocity with time. The interpretation of the results showed that the reaction is a catalytic process, in the strictest sense of the word, with respect to $TiCl_3$. The reaction is heterogeneous in nature and the initiating centers of each polymer chain, once active, maintain potentially unchanged their catalytic activity even if they are kept temporarily inactive due to lack of monomer or decrease in temperature in conditions of no or of reduced activity.

Natta, Giulio, Danusso, Ferdinando, and Moraglio, Giovanni.
ISOPHASE TRANSITIONS OF POLYMERS OF α-OLEFINES OF THE NORMAL ALIPHATIC SERIES. [1959] 11p. 13 refs.
Order from SLA mi$2.40, ph$3.30 59-15001

Trans. of Accad[emia] Naz[ionale dei] Lincei. Classe [di] Sc[ienze] Fiz[iche] Mat[ematiche] e Nat[urali] Rend[iconti] (Italy) 1958 [ser. 8] v. 24, p. 254-260.

The isophase transition temperature of crystalline and amorphous polymers of normal aliphatic α-olefines was determined dilatometrically and was found to be practically independant of the mol wt and other factors for polymers of one and the same monomer. The transition is related to transformations solely of the amorphous portion of the polymer. The transition temperature is less than -21°C and varies uniformly with the variation in the number of carbon atoms in the side chain, assuming a minimum value of -53°C for polypentene.

Natta, G., Porri, L., and Mazzei, A.
STEREOSPECIFIC POLYMERIZATION OF CONJUGATED DIOLEFINS. II. POLYMERIZATION OF BUTADIENE WITH CATALYSTS PREPARED FROM ALUMINUM ALKYLS AND SOLUBLE VANADIUM CHLORIDES. [1959] 20p. 7 refs.
Order from SLA mi$2.40, ph$3.30 59-15340

Trans. of la Chimica e l'Industria (Italy) 1959 [v. 41, no. 2] p. 116-122.

The stereospecific polymerization of butadiene with catalysts prepared by the reaction of aluminum triethyl or aluminum diethyl chloride with vanadium chlorides which are soluble in the polymerization solvent is reported. The crude products obtained consist predominantly of sterically-pure crystalline polymers with 1,4-trans concatenation which melt at 140-145°C. The activity and stereospecificity of the catalysts prepared from $VOCl_3$ or VCl_4 are studied and compared with catalysts based on crystalline VCl_3.

Nesmeyanov, A. N. and Kabachnik, M. I.
FORTY YEARS OF SOVIET ORGANIC CHEMISTRY. [1959] 67p.
Order from ATS $49.95 ATS-55L30R

Trans. of Uspekhi Khim[ii] (USSR) 1957, v. 26, no. 11, p. 1241-1294.

Nikiforov, O. K. and Suvorov, N. N.
STEROIDS. I. THE PREPARATION OF 21-BROMOPREGNANOLE-17α-TRIONE-3,11,20 FROM PREGNANOLE-3β-DIONE-11,20. 20 Feb 59, 6p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15382

Trans. of *Zhurnal Obshchey Khimii (USSR) 1958, v. 28, no. 7, p. 1984-1987.

Ostromislenskiy, I. I.
NEW METHODS OF OBTAINING ERYTHRENE. [1958] 17p. 32 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-10677

Trans. of [Zhurnal Obshchey Khimii] (USSR) 1915, v. 47, p. 1472-1494.

Ostromislenskiy, I. I.
ON THE CONDENSATION OF ALCOHOLS AND ALDEHYDES IN PRESENCE OF WATER-ELIMINATING SUBSTANCES AND ON THE MECHANISM OF THIS PROCESS. [1958] 9p. 6 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-10678

Trans. of [Zhurnal Obshchey Khimii] (USSR) 1915, v. 47, p. 1494-1506.

Pesin, V. G., Khaletskiy, A. M., and Tsin, Chow.
STUDIES OF THE CHEMISTRY OF 2,1,3-THIODIAZOLE. VIII. OXIDATION OF BENZ-2,1,3-THIODIAZOLE AND ITS DERIVATIVES. [1959] 9p. 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15383

Trans. of *Zhurnal Obshchey Khimii (USSR) 1958, v. 28, no. 8, p. 2089-2094.

Experiments showed that the organic part of the molecule during the oxidation of benz-2,1,3-thiodiazole, its 5-methyl-, 5-chloro- and 4,7-dichloro derivatives with peracetic acid is completely disrupted; ammonium sulfate and carbonyl compound (in an insignificant amount)

are the final reaction products. Benz-2, 1, 3-thiodiazole, as well as 5-methylbenz-2, 1, 3-thiodiazole, are oxidized by potassium permanganate (at 50°) and formed S-dioxide of 2, 1, 3-thiodiazole-4, 5-dicarboxylic acid and a product with a composition of $C_2H_2O_4N_2SK_2$. 4, 7-Dichlorobenz-2, 1, 3-thiodiazole reacts weakly with potassium permanganate under the above conditions (at 100°) and forms mainly substances with the composition of $C_2H_2O_4N_2K_2$. 1', 2'-Naphth-2, 1, 3-thiodiazole reacts with potassium permanganate and forms, depending on test conditions, a product with the composition of $C_2H_2O_4N_2SK_2$ or a mixture of the latter with S-dioxide of 2, 1, 3-thiodiazole-4, 5-dicarboxylic acid. Benz-2, 1, 3-thoidiazole is oxidized with ozone and forms ammonium sulfate, 1, 2, 3-thiodiazole-4, 5-dicarboxylic acid, 1, 2, 3-thiodiazole-4, 5-dialdehyde and glyoxal. (See also 59-15373)

Pesin, V. G., Khaletskiy, A. M. and Tsin, Chow.
STUDY OF THE CHEMISTRY OF 2,1,3-THIODIAZOLE. IX. INTERACTION OF o-BENZOQUINONEDIOXINE WITH DICHLORIDE. [1959] 4p. 9 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15373

Trans. of *[Zhurnal Obshchey Khimii] (USSR) 1958, v. 28, no. 8, p. 2094-2096.

The possibility of synthesizing benz-2,1,3-thiodiazole derivatives by the interaction of benzfuroxan or o-benzoquinonedioxime with phosphorus pentasulfide or H_2S was investigated. Benzfuroxan does not react with the above substances and o-bensoquinonedioxime changes into benzfurazan. Thionylchloride and thionylaniline cause dehydration (forming benzfurazan); in case of sulphur dioxidebenz-2,1,3-thiodiazole oxide is formed. (See also 59-153 83).

Sella, C.
STUDY OF POLYETHYLENES BY SMALL-ANGLE X-RAY DIFFRACTION. [1959] 3p.
Order from ATS $5.40 ATS-94L31F

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] 1959, v. 248, p. 1819-1822.

Shewyakin, M. M., Kolosov, M. N. and others.
SYNTHETIC APPROACH TO THE RING A OF TETRACYCLINES. [1959] 2p. 2 refs.
Order from LC or SLA mi $1.80, ph$1.80 59-15598

Trans. of *Akademiya Nauk SSSR. Otdeleniye Khimicheskikh Nauk. Izvestiya, 1958, no. 6, p. 794-[795].

Sumoto, Misao, Kito, Akira, and Inoue, Ryozo.
ESTER INTERCHANGE REACTION OF POLYETHYLENE ISOPHTHALATE WITH ETHYLENE GLYCOL. Rept. no. 1 on Studies on Polyesters of Phthalic Acids. [1959] 16p. 4 refs.
Order from SLA mi$2.40, ph$3.30 59-15237

Trans. of Kobunshi Kagaku (Japan) 1958, v. 15, no. 162, p. 664-670.

The ester interchange reaction between polyethylene isophthalate and ethylene glycol was studied kinetically. It was observed that the reaction occurs randomly between free hydroxyl group and ester linkage of the polyester, independent to it's chain length. Bimolecular rate constant increases linearly with the increase of concentration of ethylene glycolate as a catalyst. Energies of activation were observed as 32 kcal/mol for noncatalytic interchange and 19 kcal/mol for catalytic case.

Urbanskaya, O. S.
THE REACTION OF TERTIARY ALCOHOLS WITH UREA. [1959] 6p.
Order from ATS $6.75 ATS-45L31R

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1959, v. 29, no. 1, p. 174-179.

Wieniawski, Witold, Świderski, Jan and Kubikowski, Piotr.
BACTERIOSTATICALLY ACTIVE DERIVATIVES OF RHODANINE. [1959] 14p. 13 refs.
Order from SLA mi$2.40, ph$3.30 59-15378

Trans. of Roczniki Chemii (Poland) 1958, v. 32, p. 545-[552].

Physical Chemistry

AKADEMIYA NAUK ESTONSKOY SSR. IZVESTIYA. [SERIYA TEKHNICHESKIKH I FIZIKO-MATEMATICHESKIKH NAUK] 1958, NO. 4, P. 263-358 (News of the Academy of Sciences of the Estonia SSR. Technical and Physiocomathematical Sciences Series). [1959] 1v. SOV-23-58-4-(1-13)/13.
Order from OTS $0.60, $2.25/year PB 141 018T-4
Foreign $0.85, $3.25/year

Consists of abstracts in English.

COLLOID JOURNAL, 1958, VOL. 20, NO. 4, P. 379-481. 1959, 1v.
Order from CB $20.00, $80.00/year

Trans. of Kolloidnyy Zhurnal (USSR) 1958, v. 20, no. 4, p. 401-[512].

PROCEEDINGS OF THE ACADEMY OF SCIENCES OF THE USSR. PHYSICAL CHEMISTRY SECTION, 1958, VOL. 119, NOS. 1-6. VOL. 120, NOS. 1-6. 1959, 2 NOS.
Order from CB $35.00 each, $160.00/year

Trans. of Akademiya Nauk SSSR. Doklady. [Fizicheskaya Khimiya]
1958, v. 119, nos. 1-6.
1958, v. 120, nos. 1-6.

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1959, NO. 4, Abstracts 11195-11320 (Soviet Abstracts. Chemistry). 15 June 59, 17p. JPRS: 1678-N.
Order from OTS $1.00 59-13604

Contents:
Section B. Physical Chemistry
Section C. Inorganic Chemistry

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

ZHURNAL FIZICHESKOY KHIMII (USSR) 1958, V. 32 (Journal of Physical Chemistry).
Order from OTS $1.10, $6.00/6 mo.
Foreign $1.35, $7.50/6 mo.

No. 10, p. 2233-2469, PB 141 072T-11
No. 11, p. 2473-2651, PB 141 072T-12

Abel, E.
MECHANISM AND KINETICS OF THE OXIDATION OF IODINE ION BY OXYGEN. [1959] [14]p. 15 refs.
Order from SLA mi$2.40, ph$3.30 59-15511

Trans. of Monatshefte für Chemie (Austria) 1952, v. 83, no. 3, p. 818-828.

Oxidation of hydriodic acid by oxygen shows pecularities in two directions. The oxidation rate increases with increasing acidity. Contary to most oxidations by means of oxygen, and it is accelerated by the oxidation product iodine, i.e., autocatalytically. A mechanism is designed which accounts for both peculiarities by the kinetics derived from it. The mechanism leads over parallel paths, on which iodide ion is oxidized to iodine atom on the one hand, and iodine atom to iodine cation on the other hand. Existing experimental results fit satisfactorily into the kinetics obtained.

Abrikosov, N. Kh., Duldina, K. A., and Danilyan, T. A.
STUDY OF THE SYSTEM SnTe-PbTe. 16 Feb 59, 8p. 14 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15397

Trans. of Zhurnal Neorganicheskoy Khimii (USSR) 1958, v. 3, no. 7, p. 1632-1636.

An investigation was made of the diagram of state and the thermoelectric properties of the system SnTe-PbTe. A large number of solid solutions is formed in the ternary system. The composition diagram is lens shaped. An X-ray analysis showed a gradual increase in the constant of the crystal lattice with an increased concentration of PbTe. The curve of the relationship between the constant of the lattice and the composition showed a small positive deviation from the law of addition. The electroconductivity and thermoelectrodynamic force of alloys prepared from samples of SnTe and PbTe with positive conductivity changed gradually by smooth curves convex towards the abscissa. The change in properties was complex when the SnTe sample was positive and the PbTe sample was negative: maxima of the absolute value of the thermoelectrodynamic force were found in both parts of the system, positive for alloys rich in SnTe and negative for alloys rich in PbTe. The electroconductivity of the alloys had a minimum.

Becker, K. and Moers, K.
ON MELTING POINTS IN THE SYSTEM TUNGSTEN-RHENIUM. [1959] 3p. 6 refs.
Order from SLA mi$1.80, ph$1.80 59-15467

Trans. of Metallwirtschaft [Metallwissenschaft, Metalltechnik] (Germany) 1930 [v. 9] 26 Dec, p. 1063-1066.

According to the combined methods used by C. Agte a and H. Alterthum (Z. tech. Physik 2: 182, 1930) for determining the system of high melting point substances, the system of the two metals with the highest melting points namely tungsten and rhenium was studied from the solidus curve as well as with X-ray plates and micrographs. In this way an intermetallic phase of the composition W_2 Re_3 with a fusion point maximum at 3280° absolute was established. With the two components this phase always forms an eutectic at about 50 and 67 at. -% Re. The corresponding melting points of the eutectic lie at 3165° absolute and at 3095° absolute W_2 Re_3 is somewhat soluble in W, in which case the lattice contracts about 1.4%. Solubility of W_2 Re_3 in Re is not detectable. On the other hand, W as well as Re appears to be soluble in W_2 Re_3.

Felix, F.
DIFFUSION OF DECAYED XENON IN URANIUM OXIDE. [1959] 3p.
Order from ATS $4.35 ATS-20L30G

Trans. of Nukleonik (Germany) 1958, v. 1, no. 2, p. 66-67.

Budnikov, P. P. and Tresviyatskiy, S. G.
MELTING DIAGRAM OF THE SYSTEM MgO-CaF_2, tr. by Dr. and Mrs. Ladislaw Hanka. [1959] 10p.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3578

Trans. of Ukrain[skiy] Khim[icheskiy] Zhur[nal] (USSR) 1953, v. 19, p. 552-555.

The melting diagram of the system MgO-CaF_2 was determined by deformation of cones in an electric furnace with a graphite tube. The eutectic of the system was determined: 18 mol-% MgO and 82 mol-% CaF_2 with a melting temperature of 1350°. Thermometric analysis resulted in a similar determination of the eutectic. The line of liquefaction was determined up to the composition 51.7 mol-% MgO and 48.3 mol-% CaF_2 which, with a few variations, confirmed the melting temperature obtained by cone deformation.

Hofmann, U.
THE BOUNDARY BETWEEN GRAPHITE AND THE AROMATIC COMPOUNDS. [1959] 13p.
Order from ATS $15.30 ATS-83L30G

Trans. of Naturwiss[enschaften] (Germany) 1944, v. 32, no. 40-43, p. 260-268.

Honda, Hidemasa.
MAGNETOCHEMISTRY OF PETROLEUM. II. MAGNETIC CONSTANTS AND RINGS AND RAMIFICATIONS OF HYDROCARBONS. [1959] 21p. 18 refs.
Order from SLA mi$2.70, ph$4.80 59-15690

Trans. of Nenryo Kyokai-Shi (Japan) [1954, v. 33, p. 134-143].

Relationship equations were sought correlating the number of hydrocarbon rings with molecular volume and between the number of rings and ramifications and the magnetic susceptibility. Thus, it is now possible to determine the number of rings in a given hydrocarbon upon determining its molecular weight, specific gravity, and mass magnetic susceptibility values. With aromatic hydrocarbons, the number of rings can also be determined from the specific magnetic anisotropy. When the number of rings is known, the number of ramifications can be determined by the use of modified additivity laws regarding the magnetic susceptibility of hydrocarbons. (See also 59-14283)

Iguchi, Masasuke.
CATALYTIC OXIDE-REDUCTION BY SOME METALLIC COMPLEX SALTS. XVII. HYDROGEN ABSORPTION OF COBALT-CYANIDE COMPLEX SALT. [1959] [18]p. 10 refs.
Order from SLA mi$2.40, ph$3.30 59-15012

Trans. of [Nihon Kagaku Zasshi] (Japan) 1942, v. 63, p. 634-643.

When solutions of $CoCl_2$ and KCN were mixed together in hydrogen gas, about 1/2 M of hydrogen was absorbed per 1 M of $K_4[Co(CN)_6]$. Methylamine was obtained from the reduction product. The velocity of this hydrogen absorption is (1) especially large when the ratio of Co^{++} to CN^- is 1:4 or 1:5, (2) greatly accelerated by adding an alkaline or neutral salt, and (3) roughly proportional to the partial pressure of hydrogen but is almost independent of temperature.

Kawaguchi, T.
THE CRITICAL TEMPERATURE OF ELECTRIC CONDUCTIVITY AND THE MECHANISM OF ELECTRIC CONDUCTION. Rept. no. 2 on the Physicochemical Properties of Vanadium Pentoxide. Aug 58, 11p. 15 refs. Tr-K-54.
Order from SLA mi$2.40, ph$3.30 59-15089

Trans. of Nihon Kagaku Zasshi (Japan) 1954, v. 75, Jan., p. 94-96.

The electric conductivities of various types of crystalline vanadium pentoxide samples were measured at temperatures of 20° to 500°C. and oxygen pressures of 0.005 to 150 mm Hg. Two types of electric conduction were seen, depending on the presence or absence of impure atoms other than stoichiometrically excess vanadium atoms, and on the oxygen pressure. The mode of electric conduction, wherein the energy of activation decreased at temperatures above the critical temperature, could be explained by the Nieboer-Gurney-Mott. theory.

Kern, W. and Rauterkus, K. J.
SYNTHESIS OF MACROMOLECULES OF UNIFORM SIZE. PART IV. [1] PRINCIPLES OF THE DUPLICATION PROCESS. [1959] 13p.
Order from ATS $15.65 ATS-33L31G

Trans. of Makromolek[ulare] Chem[ie] (Switzerland) 1958, v. 28, no. 3, p. 221-235.

Kölbel, H. and Janicke, W.
CATALYTIC HYDROGENATION WITH CARBON MONOXIDE-STEAM MIXTURES. [1959] 4p.
Order from ATS $5.60 ATS-76L30G

Trans. of Brennstoff-Chem[ie] (West Germany) 1958, v. 39, no. 23/24, p. 368-369.

Kramaley, E. P.
STRUCTURE OF THE ABSORPTION SPECTRUM OF THE COLLOIDAL SILVER SOLUTION. [1959] 9p. 8 refs. T-2906.
Order from LC or SLA mi$1.80, ph$1.80 59-15591

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1958, v. 3, no. 3, p. 161-165.

In order to investigate the fine structure of the colloidal silver solution spectrum, spectrophotometric measurements of the absorption of silver hydrosols were made, using 50 samples prepared by reducing Ag_2O with phosphorus and by reducing $AgNO_3$ with tannin. The main feature of the absorption spectrum of a colloidal silver solution is the wide absorption band in which the location of the maximum in the visible region depends upon the size of colloidal particles. In addition it is characterized by a system of fine bands which is very stable with respect to the aging processes occuring in the colloidal solutions. Inasmuch as the hydrosol spectrum can be freed from the fine structure without any appreciable change in the wide band caused by the particles themselves this structure cannot be regarded as a secondary purely optical effect.

Loepelmann, Fritz.
MOLECULAR WEIGHT AND VISCOSITY OF POLYAMINO ACIDS. [1959] 25p. (6 figs. omitted) 20 refs.
Order from SLA mi$2.70, ph$4.80 59-15930

Trans. of Faserforschung und Textiltechnik (Germany) 1952, v. 3 [no. 2] p. 58-66.

A new method is given for the calculation of the viscosity number with the aid of the general equation

$$Z_\eta = \frac{m}{c}\left(\sqrt[m]{\eta_r} - 1\right).$$

The osmotic measurement of the molecular weight of polymerides of caprolactam or of ε-aminocaproic acid in m-cresol is theoretically possible. The molecular weight of polyamides can be determined by

conductometric titration of the terminal groups. With the aid of the function

$$\log N = 1.217 \cdot \log Z_\eta + 4.211$$

$$N = 16260 \cdot Z_\eta^{1.217}$$

or $$Z_\eta = 3.475 \times 10^{-4} \cdot N^{0.8217}$$

one can compute the chain-member number N of polyamides from the viscosity number. From it one obtains the molecular weight by multiplication by the mean chain-member weight. The polymerides satisfy W. Kuhn's general function.

Michel, A.
SOME EXAMPLES OF SUBSTITUTIONS OF CATIONS INTO A STABLE ANION STRUCTURE. [1959] 6p.
Order from ATS $7.00 ATS-54L31F

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1951, p. 465-467.

Ohta, Masaki.
ELECTROLYTIC REDUCTION OF NITRILES. [1959] 9p. 7 refs.
Order from SLA mi$1.80, ph$1.80 59-15271

Trans. of [Nihon Kagaku Zasshi] (Japan) 1942, v. 63, p. 1762-1765.

A study was made of various types of CN radical containing compounds which were electrolytically reduced in acid solution with a cathode of platinum covered with palladium. Corresponding amines were produced by reduction of the various typical CN radical containing compounds which were first decomposed electrolytically.

Palatnik, L. S. and Landau, A. I.
PROCESSES PROCEEDING WITH CHANGES IN THE NUMBER OF FREEDOMS IN MULTI-COMPONENT HETEROGENEOUS SYSTEMS. II. [1959] 22p. 6 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-15705

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1955, v. 29, no. 11, p. 2054-2073.

A generalized study was made of changes of a K-variant thermodynamic system into an L-variant one (59-15060; Zhur. Fiz. Khim. USSR 29: 1784, 1955). A basic system of equations was devised which defines the given K - L conversion. The rule of contiguous separation regions was derived and formulated in a general way; it expresses the relation of the dimensionality of the boundary between two separation regions in the equilibrium diagram to the difference between the numbers of pure components and the numbers of solutions (liquid, solid and gaseous phases or chemical compounds) of the given separation regions. The rule of contiguous separation regions was applied to different sections of the equilibrium diagrams. All generally possible sections were classified into nodal and non-nodal types. An equation was derived for non-nodal sections from the rule of contiguous separation regions. Methods were indicated for the application of the rule of contiguous separation regions to equilibrium diagrams or sections which include degenerated separation regions.

Paramonova, V. I. and Sergeyev, A. N.
THE APPLICATION OF ION EXCHANGE TO THE STUDY OF THE STATE OF A SUBSTANCE IN SOLUTION. V. THE STUDY OF THE PROCESS OF COMPLEX-FORMATION BY ZIRCONIUM IN NITRIC ACID. [1959] 8p. 11 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3618

Trans. of Zhur[nal] Neorg[anicheskoy] Khim[ii] (USSR) 1958, v. 3, no. 1, p. 215-221.

A study was made of the conditions for the hydrolysis of zirconium (as Zr^{95}) in solutions of perchloric acid and sodium perchlorate. With a total salt concentration in the solution equal to 2N, the hydrolysis of the zirconium starts when the $HClO_4$ concentration is equal to 1.2 to 1.0N. The data on the conditions for the hydrolysis of zirconium are in good agreement with the results of studies by Connick and McVey (J. Am. Chem. Soc. 71: 3182, 1949). The absorption curve method (ion exchange method) was used to study the formation of complexes by zirconium and nitric acid in solutions of constant acidity (2N) containing $HClO_4$ and HNO_3. Considerable cation absorption took place with extremely slight anion absorption. In solutions within the range from 2N $HClO_4$ to 1.4N HNO_3 + 0.6N ClO_4 the species present are Zr^{4+} and $Zr(NO_3)_2^{2+}$. The complexes $Zr(NO_3)^{3+}$ and $Zr(NO_3)_3^{+}$ were not detected. K_1 for the complex $Zr(NO_3)_2^{2+}$ was calculated. The value of this quantity is 0.60 ± 0.14, which is in satisfactory agreement with the results of experiments by Solovkin (Zhur. Neorg. Khim. 2: 611, 1957) obtained by an extraction method.

Paramonova, V. I.
USE OF ION EXCHANGE TO STUDY THE STATE OF MATTER IN SOLUTION, tr. by P. Collins. [1959] 19p. (2 figs. omitted) NP-tr-79.
Order from LC or SLA mi$2.40, mi$2.40 59-14762

Trans. of Zhur[nal] Neorg[anicheskoy] Khim[ii] (USSR) 1957, v. 2, no. 3, p. 523-531.

One and the same solution is brought to equilibrium both with a cationite and with an anionite and then the quantity of the investigated element absorbed by the cationite and by the anionite is determined. From these data qualitative and some quantitative conclusions may be made about the state of the studied matter in the solution.

Planovskiy, A. N. and Vlasenkov, L. A.
KINETICS OF THE PROCESS OF CONTINUOUS ADSORPTION IN A FLUIDIZED BED. [1959] [12]p. 5 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15009

Trans. of Khim[iya i] Tekhnol[ogiya] Topliv [i Masel] (USSR) 1958, v. 3 [no. 9] p. 7-13.

Investigations on the kinetics of continuous adsorption in a fluidized bed of fine grain adsorbent, were carried out in a continuous operation unit with five-stage adsorption and desorption. The inside diameter of the unit and the height of the fluidized bed in each section was 50mm. A 104-75 micron fraction of the commercial activated carbon mark E was used as the

adsorbent. The separations were carried out on methane-hydrogen mixtures of various concentrations. Results showed that the controlling factor in diffusional resistance is the degree of saturation of the adsorbent. At high levels of adsorbent saturation, from 0.9 up, the adsorption is in the region of internal diffusion while at adsorbent saturation levels of 0.8 to 0.9 the rate of the process is governed by both internal and surface diffusion. At lower saturation levels, the adsorption process is governed by surface diffusion, with higher values of the mass transfer coefficients.

Prokhorov, P. S. and Yashin, V. N.
CAUSES OF THE NONCOALESCENCE OF WATER DROPLETS IN COLLISION. [1959] [3]p. 2 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15582

Trans. of [Kolloidnyy Zhurnal (USSR) 1948, v. 10, p. 122-124].

Rayzer, M. D. and Shpigel, I. S.
STUDY OF PLASMA BY MEANS OF MICRO RADIO WAVES. [1959] [44]p. 55 refs.
Order from LC or SLA mi$3.30, ph$7.80
AEC-tr-3594

Trans. of Uspekhi Fizicheskikh Nauk (USSR) 1958, v. 64, no. 4, p. 641-667.

Theory and experiments are given for microwave analysis as applied to the study of plasma, its conductivity and dielectric constant. The discussion is presented under the following headings: Resonator procedure, waveguide method, cross modulation method, and determination of the coefficients of ambipolar diffusion, recombination and electron collision frequency.

Rubinshteyn, A. M. and Afanasiyev, V. A.
UTILIZATION OF THE DYNAMIC METHOD OF MEASUREMENT OF VAPOR ADSORPTION FOR DETERMINATION OF THE MAGNITUDE OF THE SURFACE AREA OF CATALYSTS. [1959 11p.
Order from ATS $7.75 ATS-91L31R

Trans. of *Akad[emiya] Nauk SSSR. Otdel[eniye] Khim[icheskikh] Nauk. Izvest[iya] 1956, no. 11, p. 1294-1303.

Samsonov, G. V.
THE PRESENT STATE OF RESEARCH ON THE PHASE DIAGRAM OF THE BORON-CARBON SYSTEM. [1959] 7p.
Order from ATS $8.40 ATS-55L31R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1958, v. 32, no. 10, p. 2424-2429.

Schön, K. G. and Schulz, G. V.
EBULLIOSCOPIC DETERMINATIONS OF THE MOLECULAR WEIGHTS OF SEMI-COLLOIDAL POLYSTYRENES AND POLYMETHACRYLATES BY MEANS OF A NEW METHOD AND THE RELATION BETWEEN INTRINSIC VISCOSITY AND MOLECULAR WEIGHT. [1959] 13p.
Order from ATS $11.35 ATS-16L31G

Trans. of Z[eitschrift für] Physik[alische] Chem[ie] (West Germany) 1954, Neue Folge v. 2, no. 3/4, p. 197-214.

Turyayev, I. Ya., Bushin, A. N. and others.
THE RATE OF CATALYST CARBONIZATION IN THE DEHYDROGENATION OF N-BUTANE. [1959] 10p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15304

Trans. of Zhurn[al] Fiz[icheskoy] Khim[ii] (USSR) 1957, v. 31, no. 1, p. 93-99.

The carbonization velocity of a chromia-alumina catalyst in the dehydrogenation of n-butane to butylene was experimentally determined. From 510° to 600°C, the amount of deposited carbon, C_C, in wt-% could be expressed by

$$C_C = \exp[(-15236/T) - 15.11]\theta^{0.684},$$

where θ represents the duration of a cycle in minutes, and T is temperature in °C.

Umstätter, H.
THE QUESTION OF "ADSORPTION ERROR" IN CAPILLARY VISCOMETRY. [1959] 9p. 7 refs.
Order from SLA mi$1.80, ph$1.80 59-15919

Trans. of Makromolekulare Chemie (Switzerland) 1958, v. 25 [no. 3] p. 199-204.

The amount of dissolved material contained in an extremely dilute solution is not at all sufficient to build up such a thick adsorption layer that error can result which lies above the resulting limit of error in measuring. Total weakening of the solution by adsorption can then be assumed which is not confirmed by the experiment.

Voyutskiy, S. S. and Margolina, Yu. L.
CONCERNING THE NATURE OF THE SELF-ADHESION (AUTOHESION) OF HIGH-MOLECULAR SUBSTANCES. [1959] 30p. 16 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-15938

Trans. of Uspekhi Khimii (USSR) 1949, v. 18 [no. 4] p. 449-461.

An attempt is made to arrive at the nature of the self-sticking of high-molecular compounds on the basis of known experimental facts and modern views on the nature of these substances.

Zhukovskaya, M. D.
DETERMINATION OF THE NET CALORIFIC VALUE OF NATURAL GASES BY COMBUSTION IN THE BOMB CALORIMETER (Opredeleniye Nizshey Teplotvornoy Sposobnosti Prirodnikh Gazov Szhiganiyem ikh v Kalorimetricheskoy Bombe).

July 57 [12]p. 5 refs. C. T. S. no. 344.
Order from LC or SLA mi$1.80, ph$1.80 59-14189

Trans. of Vsesoyuznyy Teplotekhn[icheskiy] Inst[itut]. Izvestiya. (USSR) 1950, no. 3, p. 17-22.

A simple method, differing very little from the combustion method of hard and liquid fuel, was developed for determining the net calorific value of natural gases of high calorific value, by combustion in a bomb calorimeter. Data concerning various Russian natural gases are given.

EARTH SCIENCES

*AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA GEOFIZICHESKAYA 1958, 1959 (News of the Academy of Sciences of the USSR. Geophysics Series).
Order from OTS $0.80, $4.50/6 mo.
Foreign $1.05, $6.00/6 mo.

1958, no. 12, p. 1425-1536, PB 141 042T-9
1959, no. 1, p. 3-175, PB 141 042T-10

Consists of abstracts in English.

Gal'perin, Ye. I., Goryachev, A. V., and Zverev, S. M.
CRUSTAL STRUCTURE RESEARCHES IN THE TRANSITION REGION FROM THE ASIATIC CONTINENT TO THE PACIFIC. 16 Feb 59, 25p. (15 figs. omitted) 10 refs. JPRS 540-D.
Order from OTS $0.75 59-11449

Trans. of mono. Issledovaniye Zemnoy Kory v Oblasti Perekhoda ot Aziatskogo Kontinenta K Tikhomu Okeanu, Moscow, 1958, p. 1-28.

The work of the Pacific Ocean Expedition in 1957 in the region of the Kurile-Kamchatka arc for the purpose of studying the structure of the earth's crust in the transitional zone between the Asiatic continent and the Pacific Ocean is described. In 1958 the work of the expedition continued in the central and northern parts of the Sea of Okhotsk, the northern Kurile Islands, Kamchatka, and in adjoining parts of the Pacific Ocean.

Ishida, Tamotsu and Shimizu, Hiromir.
RESISTANCE TO AIR FLOW THROUGH SNOW LAYERS. (PT. I). Oct 58 [11]p. 7 refs. Trans. 60.
Order from SLA mi$2.40, ph$3.30 59-15150

Trans. of mono. Sekisetsu no Tsuki Teiko (1).

A reliable method for measuring and studying the flow of air through a snow layer is presented. The resistance experienced by a steady flow of air through a snow layer was determined experimentally on many kinds of snow. It was found that the flow of air through a snow layer closely resembled that through granular porous materials, such as sand. The specific surface S cm^2/g and the mean hydraulic diameter D mm of the ice particles composing snow were determined by the following equation, which Kozeny set up for the permeability of granular beds and Carman modified later:

$$S=\frac{60}{\rho_i D}=\sqrt{\frac{\sigma}{K\eta\rho_i^2}\,\frac{p^3}{(1-p)^2}},$$

where σ is the airflow resistance (g/cm^3-sec), p the porosity of the bed, ρ_i the density of material composing the layer (g/cm^3), η is the coefficient of viscosity of the permeating fluid (poise), and K is a dimensionless figure commonly known as the Kozeny constant.

Kriss, A. E.
MICROBIOLOGICAL RESEARCH IN THE CENTRAL ARCTIC IN 1956. [1959] [5]p.
Order from LC or SLA mi$1.80, ph$1.80 59-15905

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1957, v. 114, p. 199-202.

Investigations made in 1956 in the region between the North Pole and the Canadian archipelago and Alaska are described. The Alekseeva bathometer was used for sampling water at depths varying from 5 to 3900 m. Glass slides attached by a rubber stopper to a hydrologic cable were used for observations on the vertical distribution of microorganisms. Resulting data force the assumption of the presence of seasons in the development of life under the pack ice. Colonies of microorganisms grown from water samples and from mud collected with an Alekseeva tube consisted of nonsporogenous and sporogenous bacilli, mycobacteria and cocci forms. Isolations of yeast colonies were also achieved. The quantity of microorganisms utilizing readily assimilable organic material in different ocean depths of the central Arctic is indicated in tabular form.

Climatology and Meteorology

CONCERNING RADIATIONAL OVERHEATING OF THE (SOVIET) COMB RADIOSONDE AND ITS EFFECT ON THE RESULTS OF AN ATMOSPHERIC SOUNDING, tr. by George S. Mitchell. [1959] 17p. (2 figs. suppl. tables omitted) 6 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-14686

Trans. of mono., O Radyatsionnom Peregreve Grebenchatogo Radiozonda i Ego Vliyaniy na Rezul'taty Zondirovaniya Atmosfery.

Data are reviewed which indicate that a correction of radiosounding data equivalent to the amount of the radiational overheating of the radiosonde will permit a considerable improvement in the physical picture of the thermal and baric fields of the atmosphere.

METEOROLOGIYA I GIDROLOGIYA (USSR) 1958 (Meteorology and Hydrology).
Order from OTS $0.70, $4.00/6 mo.
Foreign $0.95, $5.50/6 mo.

No. 10, p. 3-66, PB 141 045T-12
No. 12, p. 3-57, PB 141 045T-11

Consists of abstracts in English.

SCIENCE AND WEATHER. [1959] 2p.
Order from LC or SLA mi$1.80, ph$1.80 59-15110

Trans. of Sovetskiy Flot (USSR) 1957, 3 Jan.

Anapol'skaya, L. E. and Gandin, L. S.
A METHOD OF DETERMINING RATED WIND VELOCITIES IN ORDER TO PREDICT WIND LOADS ON STRUCTURES (Metodika Opredeleniya Raschetnykh Skorestey Vetra dlia Proektirovaniya Vetrovykh Nagruzok na Stroitel'nye So-oruzheniya) tr. by John Miller. Jan 59 [11]p. 4 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15563

Trans. of Meteorologiya i Gidrologiya (USSR) 1958, no. 10, p. 9-17.

But, I. V.
TEMPERATURE INVERSION CAUSED BY RAINS. [1959] 7p. (1 fig. omitted) 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-15565

Trans. of Meteor[ologiya] i Gidrol[ogiya] (USSR) 1949, no. 1, p. 119-122.

Observation of a rain accompanied by a thunderstorm in the city of Ashkhabad on 26 May 1943 during which sharp drops in air temperatures and rises in specific and relative humidity occurred, revealed a ground inversion which was caused by the sharp change in conditions of heat exchange between underlying surface and the atmosphere. The inversion of temperature caused by rain leads to weakening of vertical exchanges, and facilitates the formation of fogs in the evening and night hours, and tends to foster the development of stratified cloudiness in the evening and night.

Chuvayev, A. P.
ON CONDITIONS WHICH ARE FAVORABLE FOR THE ARTIFICIAL PROMOTION OF PRECIPITATES FROM THICK CUMULUS CLUODS. [1959] 14p. (2 figs. omitted) 7 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15555

Trans. of Meteorologiya i Gidrologiya (USSR) 1956, no. 11, p. 15-20.

Observations on cumulus convection clouds during flights over the European territory of the USSR in 1948-55 are analyzed. A decrease in the recurrence of vertical depths in excess of 3.5 km appears to be correlated with the level of temperatures at which there is incipient precipitation. The method of ascertaining the beginning of crystallization in the supercooled summits of cluds on the basis of boundary temperatures of the most developed convection cumulus clouds affords values which are in substantial agreement with those obtained by Workman and Reynolds (Bull. Amer. Met. Soc., 30, 142-144, 1949), who reported that the first reflected signals received from developing cumulus clouds were centered approximately within the region of -10°.

Dzerdzeyevskiy, B. L.
POSSIBILITIES OF CHANGING THE CLIMATIC CONDITIONS OF THE CASPIAN REGION (Puti Preobrazovaniya Klimaticheskikh Usloviy Prikaspiya) tr. by M. Slade. [1959] [17]p. (4 tables, 1 fig. omitted) 39 refs. Trans. no. 2984.
Order from LC or SLA mi$2.40, ph$3.30 59-15047

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya, 1952, no. 1, p. 3-13.

Glebov, A. and Vyalov, S.
FIVE MILLION ATMOSPHERES [AND] WHERE IT IS COLDEST OF ALL [1959] 11p. H-2983.
Order from OTS $0.75 59-11884

Trans. of Znaniye-Sila (USSR) 1958, Sep, p. 20-23.

The achievement of instantaneous pressures of as high as 5 million atmo by the use of a moving plate traveling at over 9 km sec^{-1} is described in laymen's terms. Activities at the Soviet base of Mirnyy are described. Experiments were made to determine past wind velocities from the packing of snow. The Pole of Cold and present wind conditions are described.

Gogoleva, Ye. I.
USING HUMIDITY CHARTS IN THE PROGNOSIS OF LOW CLOUDINESS. [1959] 10p. (4 figs. omitted) 2 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15556

Trans. of Meteorologiya i Gidrologiya (USSR) 1956, no. 7, p. 8-13.

Grishin, N. I.
STUDY OF MOVEMENT OF SILVERY CLOUDS BY METHOD OF MOTION PICTURE PHOTOGRAPHY. [1959] 11p. 2 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15561

Trans. of Meteorologiya i Gidrologiya (USSR) 1957, no. 3, p. 34-37.

Slow-motion pictures of noctilucent clouds made in 1953-56 are analyzed. Crests and crestlets of the observed fields constitute 3-dimensional waves which usually occupy a definite limited region. The area of the undulatory regions and the duration of their existence vary within wide limits. A "channel flow", within which small vortices occur, apparently causes formation of jets and bands.

Litvinov, I. V.
THE FUNCTION OF THE DISTRIBUTION OF PARTICLES OF LIQUID PRECIPITATES. [1959] 16p. 11 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15557

Trans. of Akademiya Nauk SSSR. Izvestiya. [Seriya Geofizicheskaya] 1956, no. 12, p. 1474-1483.

On the basis of experimental data, an analysis was made of the spectral distribution of drops in liquid precipitation. It is shown that the Marshall-Palmer and Best distribution functions do not agree with the actual distribution of drops in rains of various origins. A new function is proposed which is in better agreement with experimental findings.

Muchnik, V. M.
CERTAIN PROBLEMS IN FORECASTING THUNDERSTORMS. [1959] 6p. 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15558

Trans. of Meteorologiya i Gidrologiya (USSR) 1956, no. 3, p. 32-33.

The problem of determining the magnitude of the smallest territory (in the form of a circle) which should be used as a basis for evaluating the accuracy of the forecast of thunderstorms for one point is considered. Data from a dense network of stations and posts around Kiev during 1953-1954 show that the smallest circle which should be used is a circle with a radius of 50 km, for both frontal and intramass thunderstorms.

Muchnik, V. M.
THE RAIN INCREASE IMMEDIATELY AFTER DISCHARGES. [1959] 4p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15568

Trans. from Meteor[ologiya] i Gidrol[ogiya] (USSR) 1949, no. 3.

Muchnik, V. M.
SOME PROBLEMS IN PROCEDURE FOR OBSERVATION OF SHOWERS AND THUNDERSTORMS. [1959] 3p. 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-15572

Trans. of Meteor[ologiya] i Gidrol[ogiya] (USSR) 1955, no. 1, p. 46-48.

Difficulties in exact tabulation of thunder storms in terms of duration stem from inexact instructions issued officially to hydrometeorological stations in the USSR. Lack of automatic rain gages hinders measurement of precipitation.

Myakishev, G. Ya.
ARTIFICIAL PRECIPITATION. [1959] 1p.
Order from LC or SLA mi$1.80, ph$1.80 59-15576

Trans. of Nauka i Zhizn', 1958 [v. 25] no. 4, p. 77-78.

Artificial precipitation can usually be produced by seeding super-cooled clouds (those whose temperature is below 0°C) with dry ice or silver iodide from an airplane and can occasionally be produced by seeding "warm" clouds (with temperatures above 0°C) with calcium chloride.

Rosenberg, G.
RADAR OBSERVATIONS OF CLOUDS AND OF RAIN. [1959] 3p. (3 figs. omitted) 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15567

Trans. of [Uspekhi Fizicheskikh Nauk] (USSR) 1949, v. 39, no. 2, p. 315-316.

Geodesy

IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY. GEODEZIYA I AEROFOTOS"YEMKA (USSR) 1958, NO. 5, P. 3-185 (News of Institutes of Higher Learning. Geodesy and Aerial Photography). [1959] 1v. SOV-154-58-5-(1-18)/18.
Order from OTS $0.70, $4.00/year PB 141 007T-4
Foreign $0.95, $5.50/year

Consists of abstracts in English.

ON THE EFFECT OF THICKENING SCREEN LINES IN THE OFFSET PRINTING OF MAPS. 19 Jan 59, 22p. JPRS L-1388-D.
Order from OTS $0.75 59-11421

Trans. of Geodeziya i Kartografiya (USSR) 1957, no. 10, p. 44-55.

Analyses performed by the staff of the Riga Cartographic Plant indicate that the percentage relationship of the printing and blank elements of the screen on the published copy and on the color proof varies. In printing from forms prepared by positive copying there is more correspondence between the published copy and the color proof than in printing from forms prepared by transfer. To obviate regulatory control of the machine, it is practical in transfer to increase the thickness of the lines of the screen in printing the color proof. Calculations are presented for punctate and linear screens. The best correspondence of the publication copy and the color proof is attained if the publication copy is printed according to the saturation of color of the 50 or 70% screen, equal to the saturation of the color tone of the corresponding screen on the color proof.

Pasha, P. S., Petin, N. F. and Shcheglov, I. V.
UTILIZATION OF AERIAL PHOTOGRAPHS IN TROOP UNITS. 2 Feb 59, 191p. (photos and 180 figs. omitted) JPRS: L-1472-D.
Order from OTS $3.00 59-11442

Trans. of mono. Ispol'zovaniye Aerosnimkov v Voyskakh, Moscow, 1957, p. 1-252.

The book discusses the basic geometric properties of aerial photographs, the principles of interpretation, the methods and techniques of utilizing aerial photographs when studying the terrain and the enemy, when preparing graphic documents, and making measurements on the basis of them. The theoretical

principles of aerial photography and of aerial photographs are given in an easily-assimilated form for independent study. The book was designed as a practical handbook for officers in all branches of the army of the USSR.

Geography

VSESOYUZNOYE GEOGRAFICHESKOYE OBSHCHESTVO. IZVESTIYA (USSR) [1959] V. 91, NO. 1, P. 3-106 (News of the All-Union Geographical Society) [1959] [19]p. SOV-12-91-1-(1-22)/22.
Order from OTS $0.50, $3.00/year PB 141 006T-5

Consists of abstracts in English.

Zakolupin, N. and Zarapin, D.
THE FOURTH SOVIET ANTARCTIC EXPEDITION (Chetvertaya Antarkticheskaya). [1959] [3]p.
F-TS-9790/I.
Order from LC or SLA mi$1.80, ph$1.80 59-16047

Trans. from Pravda, Moscow (USSR) 1958, 14 Sep.

An interview on the coming fourth Soviet expedition to the antarctic by V. F. Burkhanov, chief of the USSR Main Administration of Northern Sea Routes, is described. This interview was given to representatives of Pravda.

Geology

*AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA GEOLOGICHESKAYA, 1959 [V. 24] NO. 2, P. 3-128 (News of the Academy of Sciences of the USSR, Geology Series). [1959] [16]p. SOV-11-58-2-(1-14)/14
Order from OTS $0.50, $3.00/6 mo. PB 141 005T-12
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

THE GEOLOGY OF URANIUM. [1959] 124p.
Order from CB $6.00

Collection of trans. of 12 Russian papers.

Contents:
Metamorphism of uranium ores, by V. S. Karpenko
The nature of sedimentary-metamorphic uranium mineralization, by R. V. Getseva
Origin of uranium mineralization in coal, by Z. A. Nekrasova
New data on nenadkevite, by V. A. Polikarpova
The hydrous uranyl and ammonium phosphate (uramphite). $NH_4(UO_2)[PO_4] \cdot 3H_2O$, by Z. A. Nekrasova
Ursilite-a new silicate of uranium, by A. A. Chernikov, O.V. Krumetskaia and V. D. Sidel'nikova
Conditions of formation of natroautunite, by A. A. Chernikov
Hydrothermal synthesis of uraninite, by G.P. Sidorov, R. P. Rafal'skii
Thermal investigations of some uranium minerals, by Ts. L. Ambartsumian
Radiometric methods of determining uranium content in assays, by V. L. Shashkin, L. P. Shumilin
The ratio of beta and gamma radiation in natural radioactive elements, by V. L. Shashkin, I. P. Shumilin, M. I. Prutkina
Methods and techniques of aerogeophysical prospecting for uranium deposits in foreign countries, by Ia. G. Ter-Oganesov, T. I. Gvaima, Iu. V. Roshchin, V. L. Zubova

PROCEEDINGS OF THE ACADEMY OF SCIENCES OF THE USSR. GEOCHEMISTRY SECTION, 1958, VOLS. 120-121, NOS. 1-6. 1959, 1v.
Order from CB $25.00/year

Trans. of Akademiya Nauk SSSR. Doklady. [Geokhimiya] 1958, v. 120-121, nos. 1-6.

Belousov, V. V.
TECTONOPHYSICS A NEW PROSPECTIVE BRANCH OF GEOLOGY. 20 May 59, 11p. JPRS: L-1671-D.
Order from OTS $0.50 59-11551

Trans. of Akademiya Nauk SSSR. Vestnik, 1958 [v. 28] no. 9, p. 3-10.

Geiger, Th.
MANGANESE ORES IN THE RADIOLARITES OF GRAUBUNDEN, SWITZERLAND. [1959] [7]p.
Order from SLA mi$1.80, ph$1.80 59-10430

Abstract trans. from Beiträge zur Geologi[schen Karte] der Schweiz. Geotechnische Serie (Switzerland) 1948, no. 27, 89p.

Glazov, N[ikolay] V[asil'yevich] and Glazov, A[natoliy] N[ikolayevich].
NEW INSTRUMENTS AND METHODS OF ENGINEERING GEOLOGY. 1959.
Order from CB $3.25

Trans. of Russian mono. [Novyye Pribory i Metody, Primenyayemyye v Inzhenerno-Geologicheskikh Izyskaniyakh, Moscow, 1957, 69]p.

Contents:
Preface
New methods for studying weathering, erosion, and transport of material
The use of radioactive isotopes in studying solubility and leaching in saline soils
New instruments and methods utilized in engineering-geological investigations
New methods in drilling and hydrogeologic work
A new type of water intake and its approximate calculation

Appendix 1 Table of radioactive isotopes
Appendix 2 Some rules for working with radioactive material

Ponomarev, V. N. and Zakharchenko, V. F.
USE OF MEASUREMENTS OF THE MAGNETIC FIELD IN PROSPECTING HOLES TO DETERMINE THE MAGNETIZATION OF ROCKS IN THEIR NATURAL LOCATION. 10 Mar 59, 5p. (2 figs. omitted) 1 ref. JPRS: L-682-N.
Order from OTS $0.50 59-13282

Trans. of Razvedka i Okhrana Nedr (USSR) 1958 [v. 24] no. 9, p. 33-35.

To increase the effectiveness of magnetic exploration in the prospecting for ore bodies located in ore rocks, it is extremely promising to utilize the measurements of magnetic fields in prospecting holes. The MP-1 saturation magnetometer can be recommended as the measuring instrument. It has an extension gauge which can be dropped into the hole while retaining the main part of the control apparatus on the surface. The method displays considerable advantages over measurements of individual samples, because the observations are conducted in the conditions of the natural occurrence of rocks and encompass a fairly large volume and take account of residual magnetization.

Vinogradov, A[leksandr] P[avlovich].
THE GEOCHEMISTRY OF RARE AND WIDELY SCATTERED CHEMICAL ELEMENTS IN SOILS. 2nd ed. 1959, 236p.
Order from CB $9.50

Trans. of Russian mono. [Geokhimiya Redkikh i Rasseyannykh Khimicheskikh Elementov v Pochvakh, Moscow, 1950, 277p.]

Abridged Contents:
Methods of determination of rare and dispersed elements in soils. General geochemical regularities in distribution of rare elements. Soil-forming rocks and soils of the East European Plain. Boron in soils. Fluorine, bromine and iodine in soils. Arsenic and selenium in soils. Lithium, rubidium and cesium in soils. Strontium and barium in soils. Rare earths and yttrium. Titanium and zirconium in soils. Vanadium, chromium, manganese, cobalt and nickel in soils. Copper, zinc and cadmium in soils. Lead and tin in soils. Molybdenum and tungsten. Radioactive elements in soils. Other dispersed elements in soils. Certain geochemical regularities in distribution of rare elements in soils.

Mineralogy

Korzhinskiy, D. S.
PHYSICOCHEMICAL BASIS OF THE ANALYSIS OF THE PARAGENESIS OF MINERALS. 1959, 180p.
Order from CB $7.50

Trans. of Russian mono. [Fiziko-Khimicheskiye Osnovy Analiza Paragenezisov Mineralov, Moscow, 1957, 183p.]

Abridged Contents:
General conditions of equilibrium. Reversible (equilibrium) processes. Derivation of thermodynamic potentials for systems of different types. Representation of two-component compounds and projective transformation of a set of points. Three-component diagrams of composition and their projective transformations. Representation of multicomponent systems. Application of the phase rule to paragenetic analysis of minerals. Examples of paragenetic diagrams of minerals in multicomponent systems. Relation between composition and the magnitude of the chemical potentials of a component. Method of equipotentiallines on the composition-paragenesis diagrams. Chemical potential surface in the three-component systems and its projection. Algebraic calculations of reactions in multicomponent systems by means of determinants. Systems with a negative number of degrees of freedom and general properties of multi-bundle diagrams.

Titov, I. G., Fedorovskaya, N. P. and others.
EFFECT OF MINERAL MATTER ON THE PROCESS OF FORMATION OF COALS AND ON THEIR CHEMICAL AND TECHNOLOGICAL PROPERTIES (Vliyaniye Minerla'nykh Veshchestv na Protsess Obrazovaniya Ugley i na ikh Khimiko-Tekhnologicheskiye Svoystva) tr. by E. Feigl. [1959] [13]p. (2 tables omitted) 10 refs. Trans. no. 2879.
Order from LC or SLA mi$2.40, ph$3.30 59-15043

Trans. of Akademiya Nauk SSSR. Otdel[eniye] Tekhn[icheskikh] Nauk. Izvestiya, 1954, no. 9, p. 115-123.

The effect of mineral rocks upon the process of metamorphism of the substance of mineral coals was studied. Moderate additions of oxygen containing compounds of iron (Fe_2O_3, $Fe_2(SO_4)_3$ and others) causes, on heating, an oxidative polymerization and condensation of the organic coal substance. Large additions of these compounds cause oxidation of the coal. It is possible to use ferric oxide (iron ore) for improving the cokability of gas coals, a fact of considerable practical importance.

Physics of the Atmosphere

Kazantsev, A. N., Romanova, T. S., and Klementenko, A. Ya.
RADIOWAVE ABSORPTION IN THE IONOSPHERE ACCORDING TO RADIO OBSERVATIONS ON THE ARTIFICIAL SATELLITES. 12 Feb 59, 29p. 10 refs. TK-64.
Order from LC or SLA mi$2.70, ph$4.80 59-14252

Trans. of *Radiotekh[nika] i Elektra[onika] (USSR) 1958, v. 3, no. 9, p. 1107-1121.
Another translation is available from LC or SLA mi$2.70, ph$4.80 as 59-12938, 20 Jan 59, 21p.

A method of determining the radiowave absorption coefficient in the ionosphere is described, using the results of measurements of the electric field intensity made by comparator points. The integral coefficient is found for the whole F_2 layer as well as for both halves individually, by comparing the coefficients for different satellite altitudes with respect to the maximum concentration of the F_2 layer. Absorptions of waves passing through and reflected from the ionized layer are analyzed from three distance ranges; line-of-sight, middle distance, and those over 6000 to 8000 km. The experimental results are in good agreement with those computed by the "biparabolic" layer with an exponential continuation. The field intensity at long range indicates the formation of ionospheric waveguides which specify long distance reception of signals up to distances of 16,000/cm.

Monin, A. S. and Obukhov, A. M.
BASIC LAWS OF TURBULENT MIXING IN THE GROUND LAYER OF THE ATMOSPHERE (Osnovnye Zakonomernosti Turbulentnogo Peremeshivaniya v Prizemnom Sloye Atmosfery) tr. by John Miller. Jan 59 [31]p. 20 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-15097

Trans. of Akademiya Nauk SSSR. Geofizicheskiy Institut. Trudy, 1954, no. 24(151) p. 163-187.

The article contains an analysis of the processes of mixing in a turbulent atmosphere, based on systematic application of the methods of the theory of similitude. Empirical data on the distribution of wind velocity under various conditions of temperature stratification are generalized and a method is proposed for computing the austausch characteristics on the basis of measuring wind velocity and temperature gradient.

Seismology

Petrashen', G. M. and Yenal'skiy, V. A.
ON SOME INTERFERENCE PHENOMENA IN MEDIA CONTAINING THIN PLANE-PARALLEL LAYERS. II. [1959] 20p. 1 ref.
Order from LC or SLA mi$2.40, ph$3.30 59-15261

Trans. of Akad[emiya] Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1956, no. 10, p. 1129-1144.

The roots of the characteristic equation of the problem (59-10878) on the propagation of SH waves in a layer located on a semispace are qualitatively and quantitatively examined. (See also 59-15365)

Petrashen', G. I. and Yenal'skiy, V. A.
ON SOME INTERFERENCE PHENOMENA IN MEDIA, CONTAINING THIN PLANE-PARALLEL LAYERS. III. [1959] 20p. 3 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15365

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1956, no. 11, p. 1241-1257.

The wave processes of a two-layer medium composed of a thin layer and an elastic semispace in hard contact with this layer at the points of the day surface, and in the depth of the semispace covered by a thin layer were studied. Application of the principle of reciprocity produced detailed information on the physical problems tied with the influence of the thin layer on the excitation and on the reception of vibrations propagated in the medium. (See also 59-10878)

Puzyrev, N. N.
ON THE FOUNDATION OF THE METHOD OF CIRCUMFERENCES IN THE METHOD OF REFLECTED WAVES. [1959] 16p. 6 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15845

Trans. of Prikladnaya Geofiz[ika] (USSR) 1957, no. 17, p. 76-92.

Solutions are presented for seismic hodographs in homogeneous and heterogeneous covering media. The method of circumferences for the construction of reflecting boundaries is applicable in interpreting plane surveys and nonlongitudinal profiles.

ENGINEERING

GORNYY ZHURNAL (USSR) 1959, NO. 1, P. 3-80 (Mining Journal). [1959] [19]p. SOV-127-59-1-(1-26)/26.
Order from OTS $0.50, $6.00/year PB 141 127T-12

Consists of abstracts in English.

Giers, L. V. and Sretenskiy, L. N.
INFLUENCE OF VARYING THE PRINCIPAL DIMENSIONS OF A SHIP ON ITS WAVE RESISTANCE (Vliyaniye Izmeneniya Glavnykh Razmerov Korablya na ego Volnovoye Soprotivleniye) tr. by Mildred H. Brode, David Fisher, and Alice C. Thorpe. Feb 59 [18]p. Trans. 282.
Order from LC or SLA mi$2.40, ph$3.30 59-14261

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1946, v. 10, p. 21-32.

This report gives the results of computation of wave resistance calculated on the basis of the Michell integral. Results are given for different values of the relative length and longitudinal prismatic coefficient of the ship, for constant values of the ratio of breadth to draft, and for values of some secondary parameters. Calculated results are compared with experimental data obtained by I. V. Giers.

Aeronautical Engineering

Ishlinskiy, A. Y.
THEORY OF THE DOUBLE-GYROSCOPIC VERTICAL (Teoriya Dvukhgiroskopicheskoy Vertikali) tr. by S. Reiss. Mar 59, 14p. 3 refs.
Order from NASA NASA RE 3-10-59W

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1957, v. 21, no. 1, p. 175-183.
Another translation is available from OTS $0.50 as 59-11996, F-TS-9458/V [1958] 15p.

After a brief review of the Schuler pendulum, the mathematical theory of a double gyroscopic device for measuring the local vertical is developed. The device called the double gyroscopic vertical is basically mechanical in principle. Theoretical error corrections are developed, and a short analysis of the stability of the system is presented. In addition, it is shown here that, with the aid of a simple computer, geoconcentric latitude may be obtained. No experimental results are presented.

Kosmodem'yanskiy, A. A.
AN EMINENT PIONEER IN SCIENCE (Vydayushchiysya Uchenyy-novator) [1959] [17]p. 2 refs. F-TS-9395/III.
Order from LC or SLA mi$2.40, ph$3.30 59-16041

Trans. of Priroda (USSR) 1957 [v. 46] no. 10, p. 73-78.

The work of K. E. Tsiolkovskiy is briefly summarized, on the centenary of his birth.

Nikolskiy, A. A.
ON LIFT PROPERTIES AND INDUCED DRAG OF WING-FUSELAGE COMBINATION (O Nesushchikh Svoystvakh i Induktivnom Soprotivlenii Sistemy Krylo-fyuzelazh) tr. by S. Reiss. Apr 59, 8p. 1 ref.
Order from NASA NASA RE 5-1-59W

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1957, v. 21 [no. 2] p. 189-194.

A method of determining the overall lift and induced drag of wing-fuselage combination in incompressible flow is described. The wing panel circulation distribution required for minimum induced drag is presented for various ratios of body diameter to wing span along with the values of the minimum induced drag.

Zaytsev, V. A. and Ledokhovich, A. A.
ON THE INFLUENCE OF CLOUDS AND RAIN DROPS ON MEASUREMENT OF TEMPERATURE FROM AN AIRPLANE. [1959] 11p. (3 figs. omitted) 6 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15554

Trans. of Meteorologiya i Gidrologiya (USSR) 1956, no. 6, p. 41-44.

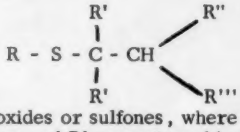
Airplane thermometers not protected against cloud drops, rain and ice can yield distroted data on the temperature distribution of the free atmosphere. A differential electric thermometer is described which consists of a "deceleration thermometer" and a "screened thermometer" in a common ventilated housing tube through which pass wires from the 2 instruments to an electric resistance bridge. The screened thermometer has a correction factor which depends on flight velocity. Measurements secured by means of the differential thermometer indicate that within the free atmosphere there exists a considerably greater thermal stratification than can be detected on the basis of measurements made with the meteorograph and radiosonde.

Chemical Engineering

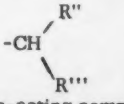
ACCELERATORS FOR POLYMERIZATION OF METHACRYLATES. [20 Mar 59] 11p.
Order from RIS $25.00 Rept. 61004

Trans. of German patent application F 14 832 (39c, 25/01) DAS 1 026 526, by Farbenfabriken Bayer A. G., Leverkusen, filed 28 May 54, pub. 20 Mar 58.

A process is described for producing polymers from polymerizable vinyl compounds with the use of sulfur-containing compounds as accelerators. Use is made of thioethers of this formula:



or of their sulfoxides or sulfones, where R represents any organic group and R' nonactivated hydrogen atoms or organic groups identical to or different from R, and R'' and/or R''' represent groups by which the hydrogen atom of the group



is activated. Basic-acting compounds are added which accelerate the process.

FUNGICIDAL BENZIMIDAZOLE DERATIVES. [3 Apr 59] 5p. 14 refs.
Order from RIS $8.00 RIS rept. 25733

Trans. of German patent application Sch 11 546 (12p, 9) filed 22 Jan 53, pub. 4 Nov 54, by Schering A. G., Berlin.

p-Substitution of a benzyl radical in position 1 by halogen, e.g., chlorine, results in an extraordinary increase of activity against skin fungi. These valuable new compounds are prepared according to conventional methods. Suitably substituted o-phenylenediamines, for example, may be reacted with formic acid to form the desired benzimidazoles. In lieu of

formic acid, formic acid derivatives such as formamide may be used. Alternatively, Schiff bases may be prepared from the same o-diamino compounds and oxidized to the desired benzimidazole compounds by oxidation. It is possible to start from unsubstituted benzimidazole, reacting this with a p-halogen-substituted benzyl halide in order to introduce the desired substituent into the 1-position of the benzimidazole. The new compounds show low toxicity both in oral and intravenous administration.

IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY. KHIMIYA I KHIMICHESKAYA TEKHNOLOGIYA (USSR) 1958, NO. 4, P. 3-142 (News of the Institutes of Higher Learning. Chemistry and Chemical Technology). [1959] 1v. SOV-153-58-4-(1-22)/22.
Order from OTS $1.00, $5.50/year PB 141 056T-4
Foreign $1.25, $7.00/year

Consists of abstracts in English.

KHIMICHESKAYA PROMYSHLENNOST' (USSR) 1958, NO. 8, P. 453-505 (Chemical Industry). [1959][24]p. SOV-64-58-8-(1-19)/19.
Order from OTS $0.60, $2.25/6 mo. PB 141 059T-9
Foreign $0.85, $3.25/6 mo.

Consists of abstracts in English.

KHIMIYA I TEKHNOLOGIYA TOPLIV I MASEL (USSR) 1958 [V. 3] (Chemistry and Technology of Fuels and Oils).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 10, p. 1-71, PB 141 060T-10
No. 11, p. 1-72, PB 141 060T-9

Consists of abstracts in English.

MODIFICATION OF ALKYD RESINS. [17 Apr 59]7p.
Order from RIS $13.75 RIS rept. 61011

Trans. of German patent application R 11 293 (39c, 16) DAS 1 022 381, filed 27 Mar 53, pub. 9 Jan 58, by Roehm & Haas G. m. b. H., Darmstadt.

A process for the modification of alkyd resins is described which utilizes low mol wt polymers of esters of acrylic and/or methacrylic acid.

NAUCHNYYE DOKLADY VYSSHEY SHKOLY. KHIMIYA I KHIMICHESKAYA TECHNOLOGIYA (USSR) 1958, NO. 4, P. 613-809 (Scientific Reports of Higher Schools. Chemistry and Chemical Technology). [1959] 1v. SOV-156-58-4-(1-49)/49.
Order from OTS $1.30, $5.00/year PB 141 066T-3
Foreign $1.55, $6.00/year

Consists of abstracts in English.

NEFTYANIK (USSR) 1959; NO. 3, P. 1-35 (Petroleum Worker). [1959] 1v. SOV-92-58-3-(1-44)/44.
Order from OTS $0.60, $3.50/6 mo. PB 141 085T-13
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

NEFTYANOYE KHOZYAYSTVO (USSR) 1958 [V.36] NO. 12, P. 1-72 (Petroleum Economy). [1959] [16]p. SOV-93-58-12-(1-16)/16.
Order from OTS $0.50, $3.00/6 mo. PB 141 086T-9
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

PROCEEDINGS OF THE ACADEMY OF SCIENCES OF THE USSR. CHEMICAL TECHNOLOGY SECTION, 1958, VOLS. 120-121, NOS. 1-6. 1959, 1v.
Order from CB $25.00/year

Trans. of Akademiya Nauk SSSR. Doklady. [Khimicheskaya Tekhnologiya] 1958, v. 120-121, nos. 1-6.

PROCESS FOR MANUFACTURING HIGHLY CONCENTRATED SILICA SOL. [17 Oct 58] 8p.
Order from RIS $14.75 RIS rept. 96931

Trans. of German patent application F 21 892 (12i, 38) DAS 1 026 735, by Farbenfabriken Bayer A. G., Leverkusen, filed 10 Dec 56, pub. 27 Mar 58.

Concentrated, stable silica sols with SiO_2 contents exceeding 30% can be obtained from technical grade water glass solutions with relatively high electrolyte contents, including sulfate water glass, in a simple procedure requiring no treatment with an OH^- exchanger. The acid sol containing 5 to 10% SiO_2, obtained by treatment with an H^+exchanger, is mixed with precipitating additives which are hard to dissolve in water and form almost insoluble sulfates, such as $BaCO_3$, $PbCO_3$, Pb oxides, or benzidine. The sulfuric acid contained in the sol is consumed, and the pH rises quickly. To prevent a gel from forming, the pH is not allowed to reach neutral. Using a 6% waterglass sol with a pH of about 2, the pH should not rise above 3 during treatment. The maximum pH depends on the particle size of the silici acid and on its concentration. The higher the dilution and acidity of the fresh, finely divided sol, the greater its stability. The sulfate obtained is separated, and the silica sol is then processed as usual and concentrated, using NaOH.

PROCESS FOR MANUFACTURING REACTOR-GRADE GRAPHITE. [3 Apr 59] 3p.
Order from RIS $5.00 RIS rept. 97018

Trans. of German patent application S 55 671 (12i, 33) DAS 1 047 179, filed 25 Oct 57, pub. 24 Dec 58, by Siemens-Planiawerke A. G. für Kohlefabrikate, Meitingen.

A process is described for manufacturing reactor-grade graphite by treatment of graphite with halogen gas, e. g. chlorine or fluorine, or halogen compounds and subsequent purging with a gas. Carbon monoxide is used as the purge gas following the halogen treatment of the graphite. Highest-purity nitrogen is used as purge gas in the first purge phase at high temperature (2700°C), and the purge is then continued with carbon monoxide.

PROCESS FOR PREPARING BLOCKED ISOCYANATES SOLUBLE IN ORGANIC SOLVENTS. [3 Apr 59] 13p.
Order from RIS $26.50 RIS rept. 61041

Trans. of German patent application F 19 012 (39c, 6), DAS 1 035 362, filed 8 Dec 55, pub. 31 July 58, by Farbenfabriken Bayer A. G., Leverkusen.

A process is described for preparation of higher-molecular weight blocked isocyanates soluble in organic solvents which possess several NCO groups that can be liberated by thermal cleavage of urethan groups. Diisocyanates are reacted at elevated temperature with monohydroxyl compounds in molar ratios of 1.0:0.6 to 1:2, and the reaction products containing urethan groups are subsequently polymerized, likewise at elevated temperature.

PROCESS FOR PREPARING BOROHYDRIDES OF THE ALKALINE EARTHS OR MAGNESIUM. [24 Apr 59] 5p. 2 refs.
Order from RIS $8.00 RIS rept. 97043

Trans. of German patent application G 14 427 (12i, 1/01) DAS 1 045 375, filed 14 May 54, pub. 4 Dec 58, by Gyogyszeripari Kutato Intezet, Budapest (Priority: Hungary, 19 May 53, 1 Apr 54 and 24 Apr 54).

A process is described for preparing borohydrides of the alkaline earths or magnesium. An alkali borohydride, preferably sodium or potassium borohydride, is reacted with a salt of an alkaline earth metal or magnesium in an alcohol, particularly methanol or ethanol, as solvent at a low temperature, preferably one below 0°C. The salt reacted with the alkali borohydride is a halide, particularly a chloride or bromide.

PROCESS FOR PREPARING HIGH-PURITY THALLIUM COMPOUNDS. [29 May 59] 4p.
Order from RIS $6.75 RIS rept. 97039

Trans. of German patent application L 27 083 (12n, 1) DAS 1 045 999, filed 9 Mar 57, pub. 11 Dec 58, by Licentia Patent-Verwaltungs G. m. b. H., Hamburg.

A process for preparing high-purity thallium compounds is described. The thallium-containing starting material is converted to a hydriodic, hydrobromic or hydrochloric acid solution with an acid normality of 0.1 to 4. This is extracted with an ether which dissolves the thallium complex. In lieu of a hydrohalic acid, the alkali halide corresponding to it can be used with sulfuric acid. Isopropyl ether serves as organic solvent.

PROCESS FOR PREPARING NEW SALICYLIC ACID DERIVATIVES. [3 Apr 59] 4p.
Order from RIS $8.00 RIS rept. 25658

Trans. of German patent application B 16 708 (12q, 34), filed 11 Sep 51 pub. 5 Mar 53, by Badische Anilin- und Soda-Fabrik, A. G., Ludwigshafen.

A process for preparing salicylic acid derivatives is described, characterized in that amino salicylic acids or salts thereof are reacted with compounds containing two epoxide groups in the molecule.

PROCESS FOR PRODUCING EXTREMELY PURE SILICON. [17 Apr 59] 3p.
Order from RIS $7.00 RIS rept. 97016

Trans. of German patent application S 36 927 (12i, 38) DAS 1 045 995, filed 23 Dec 53, pub. 11 Dec 58, by Siemens & Halske A. G., Berlin and Munich.

A process for producing extremely pure silicon, preferably for semiconductors, by thermal decomposition of a silicon compound which can be prepared in very pure form by crystallization and/or distillation is described. The decomposition is carried out at temperatures above the melting point of silicon. The pure silicon precipitating in liquid form is recovered in the form of a rod by collecting the droplets of silicon forming on a surface and dripping down from this surface with the aid of a drip tube which is continuously being lowered at a rate commensurate to the amount of silicon dripping down. The drops are cooled at the same time.

PROCESS FOR PRODUCING HIGH-MOLECULAR WEIGHT POLYETHYLENES. [3 Apr 59] 8p.
Order from RIS $16.75 RIS rept. 97019

Trans. of German patent application Z 4603 (39c, 25/01), DAS 1 046 319, filed 11 Dec 54, pub. 11 Dec 59, by Karl Ziegler, Mülheim.

A process is described for producing high-molecular weight polyethylenes by polymerization of ethylene in the presence of catalysts under any desired pressure and at temperatures from -20°C upward. Catalysts obtained from aluminum compounds of the general formula R_2AlHal, where R represents a hydrocarbon radical and Hal halogen, and compounds of Group VIII metals or of manganese are used under conditions in which the metal compounds do not ionize. The polymerization is carried out under pressures of 10 to 250 atm and preferably at temperatures above 50°C, e.g., at 100 to 110°C.

SOVIET RESEARCH IN CATALYSIS (1949-1955). [1958]
Order from CB $200.00

A collection of translations from the 1949-1955 issues of Soviet chemical journals. Individual papers available at $7.50

SOVIET RESEARCH IN CATALYSIS (1956). 1959.
Order from CB $120.00

A collection of translations from the 1956 issues Soviet chemical journals.

Part I: Theoretical and sundry associated effects	$15.00
Part IIa: General	
Part IIb. General	60.00
Part III: Reduction; oxidation; Fischer-Tropsch	15.00
Part IV: Hydrogenation; cracking	20.00
Part V: Isomerization; alkylation	15.00
Part VI: Polymerization; Friedel-Crafts; Zeigler	15.00

Individual papers available at $7.50

Albanesi, G. and Tovaglieri, M.
REACTIONS BETWEEN ACETYLENE HYDROCARBONS AND CARBON MONOXIDE CATALYZED BY COBALT CARBONYLS. PT. I. OCTATRIENE-DIOLIDES. [1959] 27p. 16 refs.
Order from SLA mi$2.70, ph$4.80 59-15342

Trans. of la Chimica e l'Industria (Italy) 1959, v. 41, no. 3, p. 189-194.

By reaction between acetylene and carbon monoxide in the presence of cobalt carbonyls as catalyst, the cis- and trans-isomers of the unsaturated di-lactone compound 2, 46-octatriene-1:4. 5:8-diolides were obtained. The reaction, which can be applied also to other acetylene hydrocarbons, is carried out in the presence of solvents at 90 to 100°C at carbon monoxide pressures of 200 to 300 atm. Yields, calculated with reference to the acetylene employed, are 20 to 30%.

[Anisimov, Igor' Vasil'yevich]
AUTOMATIC CONTROL OF RECTIFICATION PROCESSES. 1959.
Order from CB $25.00

Trans. of Russian mono. [Avtomaticheskoye Regulirovaniye Protsessov Rektifikatsii, Moscow, 1957, 104p.]

This book considers the technological prerequisites for automatic control of rectification processes and the basic variants of control systems for fractionating columns as they depend on the physical characteristics of the control systems and the requirements imposed by the process.

Azatyan, V. D.
CYCLIC TRIMERIZATION OF PHENYLACETYLENE. 23 Apr 59 [5]p. 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15626

Trans. of Akad[emiya] Nauk Armyan[skoy] SSR [Yerevan]. Doklady, 1958, v. 27, p. 37-39.

The formation of 1, 3, 5-triphenylbenzene is reported together with the expected basic condensation products - colorless liquids with a pleasant odor, almost completely unchanged after standing for a number of years. Considerable amounts of crystalline substances were also obtained, e.g., in the condensation of phenylacetylene with ethanol or octanol at temperatures of 75 and 90°, respectively, as a result of a vigorous exothermal reaction. After repeated recrystallization from butanol, acicular crystals with a pale yellowish tinge were isolated, and identified as triphenylbenzene.

Babitskiy, B. D. [Dolgoplosk, B. A. and Krol, V.A.]
THE SYNTHESIS AND THE STUDY OF SOME PROPERTIES OF 1, 4-POLYBUTADIENE. [1959] [4]p. 10 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15621

Trans. of Khimicheskaya Nauka i Promyshlennost' (USSR) 1957, v. 2, p. 392-393.

Results are discussed briefly of the polymerization of 1, 4-polybutadiene using a mixture of $Al(CH_2)_3$ and $TiCl_4$ as a catalyst. Structure and temperature of vitrification of the polybutadiene are tabulated.

Baumgarten, Paul and Bruns, Werner.
THE REACTION OF BORON FLUORIDE WITH ALUMINUM OXIDE, SILICONE DIOXIDE AS WELL AS SILICATES AND THE POSSIBLE APPLICATION OF THIS REACTION TO THE DECOMPOSITION OF ALUMINUM-CONTAINING SILICATES FOR THE PREPARATION OF STARTING MATERIALS SUITABLE FOR USE IN THE MANUFACTURE OF ALUMINUM. [1959] 7p. 6 refs.
Order from SLA mi$1.80, ph$1.80 59-15364

Trans. of Chemische Berichte (West Germany) 1941, v. 74B [no. 6] p. 1232-1236.

Berkovich, T. M., Kheyker, D. M. and others.
THE PROBLEM OF PHASE COMPOSITION OF THE PRODUCTS FORMED IN THE HYDRATION OF C_3S AND B-C_2S. [1959] 6p. 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15707

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 120, no. 2, p. 372-375.

A study was made of the phase composition in the process of hydration of C_3S and C_2S under different temperature and moisture conditions and of the effect of admixtures of ground quartz sand and asbestos. Hydration results in the system C_3S-H of $Ca(OH)_2$ and calcium hydrosilicates the composition of which depends on the temperature of the system. Autoclave curing, if not too intensive, results in a strength gain in the cement paste but not for asbestos cement. Addition of sand also was a considerable improvement for C_3S cement paste, C_2S cement paste and asbestos cement.

Birthler, R[ichard] Deutloff, E[rwin] and Szkibik, C[hristian].
MEDIUM PRESSURE HYDROGENATION REFINING OF BROWN COAL TAR MIDDLE OILS WITH THE AID OF A TWIN CHAMBER. [1959] 9p. (4 figs. omitted) 7 refs.
Order from SLA mi$1.80, ph$1.80 59-15822

Trans. of Chem[ische] Techn[ik] (East Germany) 1958, v. 10, no. 2, p. 75-78.

Problems are discussed which require basic process engineering changes when processing brown coal tar middle oils or similar substances. These changes are: (1) coke formation along the heating path, (2) high ash content of the raw material, and (3) regeneration of the catalyst.

Bolotov, B. A. and Popova, A. N.
SYNTHESIS OF UREA FROM AMMONIA AND CARBON DIOXIDE. [1959] 15p.
Order from ATS $19.95 ATS-07L30R

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1934, no. 9, p. 32-38.

Furukawa, Junji, Tsuruta, Teiji and others.
POLYMERIZATION REACTIONS OF BUTADIENE AND SOME VINYL COMPOUNDS WITH BINARY MIXTURES OF TRIALKYLBORON AND METAL HALIDES. [1959] 22p. 21 refs.
Order from SLA mi$2.70, ph$4.80 59-15500

Trans. of Kogyo Kagaku Zasshi (Japan) 1958, v. 61, no. 8, p. 1046-1050.

The polymerization of butadiene by mixed catalysts of tributyl boron (BBu_3) and metal halides was examined. Titanium tetrachloride, zirconium tetrachloride, tin tetrachloride, aluminum chloride, antimony pentachloride, nickel chloride (hydrate), palladium chloride, mercuric chloride, and boron trifluoride (ether complex compound) were used as metal halides. In the case of $BF_3 \cdot Et_2O$, a polymer was obtained at high yield but the product varied from liquid state to an elastic solid depending on the ratio of $BF_3 \cdot Et_2O/BBu_3$. In the case of $TiCl_4$, a small amount of viscous liquid polymer formed, but in the case of $ZrCl_4$ a solid polymer was obtained at good yield. There was nearly no polymer yield in the other instances.

Furukawa, Junji, Tsuruta, Teiji and others.
REACTIVITY OF ORGANOMETALLIC COMPOUNDS IN POLYMERIZATION REACTION--CONSIDERATION BASED UPON THE PERIODIC TABLE. [1959] 25p. 66 refs.
Order from SLA mi$2.70, ph$4.80 59-15496

Trans. of Kogyo Kagaku Zasshi (Japan) 1958, v. 61, no. 6, p. 723-728.

Alkyl compounds of Na, Zn, Ca, B, Sn, P, Sb, and Bi were synthesized and used as catalysts for the polymerization of various vinyl monomers. Quaternary salt formation reactions were found to occur more easily the greater the electronegativity of the metal. Using this result and others with those of Natta (e.g., see 59-12991) and other researchers the polymerization reactivities were arranged according to the periodic table, using the electro-negativity of the metal atoms as an index.

Gamburg, D. Yu. and Sarychev, B. L.
STUDY OF THE KINETICS OF OXIDATION OF REDUCED IRON CATALYSTS AND ORES BY STEAM FOR THE PURPOSE OF OBTAINING HYDROGEN. [1959] 10p.
Order from ATS $12.90 ATS-40L31R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1958, v. 3, no. 10, p. 16-24.

Gudkov, S. F.
THE MECHANISM OF THE INCOMPLETE OXIDATION OF METHANE IN THE PRESENCE OF NITROGEN OXIDES. [1959] 7p.
Order from ATS $7.75 ATS-67L31R

Trans. of *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1959, v. 32, no. 2, p. 342-346.

Hayashida, Kensei.
VELOCITY- AND PRESSURE-DISTRIBUTION IN SCREW CHANNEL OF EXTRUDER. [1959] 21p. 18 refs.
Order from SLA mi$2.70, ph$4.80 59-15498

Trans. of Kogyo Kagaku Zasshi (Japan) 1958, v. 61, no. 11, p. 1430-1435.

The flow mechanism within the screw channel is analysed, assuming the material to be quasi-plastic, by using equations of Rabinowitsch (Z. physik. Chem. 145: 1, 1929) and de Waele-Ostwald (Kolloid Z. 36: 99, 157, 1925) as the flow equations. The results are summarized in nondimensional diagrams. The calculated values for the screw tip pressure agreed with previous experiment results (Kagaku Kogaku 22: 508, 1958). From the standpoint of applicative handling, Rabinowitsch's equation is more convenient for analysis as an approximate equation for quasi-plastic flow. The exponent of the de Waele-Ostwald equation was also studied.

Immergut, E. H. and Mark, H.
GRAFT AND BLOCK COPOLYMERS FROM SYNTHETIC AND NATURAL MACROMOLECULES (Uber Pfropf- und Block-Mischpolymere aus Synthetischen und Natürlichen Makromolekülen). [1959] [22]p.
Order from SLA mi$2.70, ph$4.80 59-15947

Trans. of Makromolekulare Chemie (Switzerland) [1956] v. 18/19, p. 322-341.

Examples of graft and block copolymers made by combination of synthetic macromolecules are given and different methods of synthesis discussed. The results obtained on applying these methods to the synthesis of graft and block copolymers containing natural high polymers such as proteins, starch, cellulose, and rubber are also reported. The article draws heavily from English language sources.

Ioffe, S. T.
VINYLATION BY MEANS OF THE GRIGNARD REACTION [Vinilirovaniye Posredstvom Reaktsii Grin'yara]. [1959 16p.
Order from ATS $15.25 ATS-35L31R

Trans. of Uspekhi Khim[ii] (USSR) 1958, v. 27, no. 8, p. 1010-1024.

Ivanov, V. I. and Lenshina, N. Ya.
CONCERNING THE PROBLEM OF ION EXCHANGE IN CELLULOSE AND ITS DERIVATIVES. [1959] 3p. [refs. omitted].
Order from LC or SLA mi$1.80, ph$1.80 59-15776

Trans. of *Akad[emiya] Nauk SSSR. Otdel[eniye] Khim[icheskikh] Nauk. Izvest[iya] 1956 [no. 4] p. 506-507.

Ion exchange on cellulose free from inorganic ion-exchanging cations proceeds by virtue of carboxyl groups. The mechanism of absorption of Fe^{+++} by cellulose is different from that of Ni^{++}.

Kamiya, Yoshio.
SEPARATION AND DETERMINATION OF BENZENECARBOXYLIC ACIDS FROM WATER-SOLUBLE ACIDS OBTAINED BY ALKALI-OXYGEN OXIDATION OF BITUMINOUS COAL. [1959] 20p. 12 refs.
Order from SLA mi$2.40, ph$3.30 59-15499

Trans. of Kogyo Kagaku Zasshi (Japan) 1958, v. 61, no. 9, p. 1169-1172.

Shikamachi coal was oxidized in a sodium hydroxide water solution by adding copper sulfate, under the conditions of, 255°C., 120 minutes, and total pressure of 55 ~7 kg/cm^2 (oxygen partial pressure approximately 14 kg/cm^2). The water-soluble acids obtained as oxidation products (yield about 50%) in quantity of 300 g were esterified with methanol, and were divided into three portions depending on the difficulty or ease of esterification (F-I, II, III). F-I (yield 73.4% relative to water-soluble acids) was divided into nine fractions by precise vacuum-distillation, and from each fraction benzoic acid (small amount), o-phthalic acid, isophthalic acid, terephthalic acid, trimellitic acid (1.2.4.), hemimellitic acid (1.2.3), trimesic acid (1.3.5.), pyromellitic acid (1.2.4.5.), mellophanic acid (1.2.3.4.), and naphthalenetricarboxylic acid[s] were isolated and identified. F-II was dissolved in alcohol and left standing, and from the precipitate we obtained a mixture of benzenepentacarboxylic acid and tetracarboxylic acids, from F-III, mellitic acid was isolated and identified as concentrated ammonia water-insoluble component. The benzenecarboxylic acids were mainly di- tri-, and tetracarboxylic acids, but the principal components were trimellitic acid, o-phthalic acid, and pyromellitic acid.

Levi, B. I., V. I., and Krylova, M. N.
A STUDY OF COLUMN CONDITIONS DURING DISTILLATION OF THE MELT OBTAINED IN THE SYNTHESIS OF UREA. [1959] 13p.
Order from ATS $16.65 ATS-05L30R

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1936, no. 18, p. 1109-1114.

Levi, B. I., Orlov, V. I., and Krylova, M. N.
A STUDY OF COLUMN CONDITIONS DURING DISTILLATION OF THE MELT OBTAINED IN THE SYNTHESIS OF UREA. [1959] 9p.
Order from ATS $12.60 (2.75) ATS-06L30R

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1936, no. 19, p. 1170-1173.

Lisin, D. M.
RELATIONSHIP BETWEEN THE COKING PERIOD AND THE WIDTH OF THE FURNACE CHAMBER. [1959] [7]p. 5 refs. (p. 99-105 of Soviet Metal Technology, v. 2, no. 1)
Order from PS $5.00

Trans. of Koks i Khimiya (USSR) 1958, no. 12, p. 18-21.

Ludewig, Hermann and Froeber, Karl.
THE REWORKING OF POLYAMIDE (PERLON, NYLON, AND TRELON) WASTES BY THE DEPOLYMERIZATION-FILTRATION METHOD. [1959] [20]p. (4 figs. omitted) 12 refs.
Order from SLA mi$2.40, ph$3.30 59-15783

Trans. of Faserforschung und Textiltechnik (Germany) 1954 [v. 5] no. 7, p. 277-284.

The reaction products arising through the heating of ϵ-caprolactam, ϵ-aminocaproic acid or Perlon with water under pressure are qualitatively and quantitatively very little different independently of which of the three materials was the starting point. The composition of the reaction products is independent of the quantity of water used and of the reaction temperature. Increase of the water quantity and increase of temperature have as a result an increase of the lactam portion and a lowering of the average degree of polymerization of the remaining linear products. At temperatures under 180°C (vapor pressure <10 atmospheres) the velocity of the depolymerization or polymerization is small, but it is still possible at this temperature at which the water affects the depolymerization of the polyamide little or none at all to make a solution of high polymer polyamide wastes in water and a cleaning by filtration. The method of regenerating polyamide wastes by heating with water under pressure, filtering the solution under pressure, and again polymerizing the products obtained offers a technically simple and elegant process for the utilization of wastes.

Mazov, A. V., Turskiy, Yu. I., and Danchenko, L. E.
EXTRACTION OF PHENOLS FROM TAR FRAC-

TIONS WITH AQUEOUS SOLUTIONS OF METHANOL. [1959] 8p.
Order from ATS $9.10 ATS-41L31R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1958, v. 3, no. 10, p. 44-49.

Mikheyeva, V. I. and Fedneva, E. M.
COMPLEX COMPOUNDS OF BOROHYDRIDES WITH NITROGEN CONTAINING ORGANIC BASES. I. COMPOUNDS OF DIBORANE WITH PYRIDINE AND QUINOLINE (Kompkleksnye Soyedineniya Borovodorodov S Azotsoderzhashchimi Organicheskimi Osnovaniyami. I. Soyedineniya Diborana s Piridinom i Khinolinom). [1958] 6p. 26 refs. C.T.S. no. 324.
Order from LC or SLA mi$1.80, ph$1.80 59-10230

Trans. of Zhurnal Neorganicheskoy Khimii (USSR) 1956, v. 1, no. 5, p. 894-902.

Compounds of pyridine and quinoline with diborane of the composition $C_5H_5N.BH_3$(m.p. 9-10°: dec. 155-160°) and $C_9H_7N.BH_3$(m.p. 95-96°: dec. 118°) obtained by passing diborane into dry pyridine or quinoline were studied. The cryoscopic determination of the molecular weight of the pyridine diborane complex gave values close to the theoretical molecular weight for low concentrations only. With increasing complex concentration the degree of association rapidly rose in the non-polar benzene and only slowly in the polar nitrobenzene. On standing with LiH the pyridine complex polymerised and a mechanism of polymerisation is suggested. The action of etherial BF_3 and $AlCl_3$ on the pyridine complex gave yields of free diborane of 57-60% and 50% respectively. Heating curves for both the pyridine and quinoline diborane complexes, and their transformation products, were studied.

Natta, G., Asta, G. dall' and others.
THE STEREOSPECIFIC POLYMERIZATION OF VINYL ETHERS. [1959] 14p. (1 table omitted) 21 refs.
Order from SLA mi$2.40, ph$3.30 59-15761

Trans. of Angew[andte] Chem[ie] (West Germany) 1959, v. 71, no. 6, p. 205-210.

Ohrn, O. E.
REPLY TO THE PRECEDING PUBLICATION OF H. UMSTÄTTER: PROBLEM OF THE SO-CALLED "ADSORPTION ERROR" IN THE CAPILLARY VISCOSIMETRY (Entgegnung zur Vorstehenden Publikation von H. Umstätter: Zur Frage der sog. "Adsorptionsfehler" in der Kapillarviskosimetrie). [1959] [7]p. 10 refs.
Order from SLA mi$1.80, ph$1.80 59-15920

Trans. of [Makromolekulare Chemie (Switzerland) 1958, v. 25, no. 3, p. 205-209].

Experiments prove that the results of viscosity measurements depend on the diameter of the capillary used. Hitherto these viscometer effects were most reliably explained as due to an adsorption. (See also 59-15919)

Ol'skiy, Yu. Ya.
NEW TECHNOLOGICAL METHODS OF PROCESSING TURGAY BAUXITES. 26 Nov 58, 3p. JPRS/DC L-1159.
Order from OTS $0.50 59-11337

Trans. of Tsvetnyye Metally (USSR) 1958 [v. 31] no. 7, p. 91-92.

Variants of the Bayer hydrochemistry methods worked out on a laboratory scale by the Kazakh Mining Metallurgical Institute and the Kazakh Academy of Sciences for the elimination of sintering in the processing of Turgay bauxites are described. Method 1: the red slime is forwarded, after treatment with alkali, for a second treatment with concentrated alkali solutions at high temperature in the presence of lime. Total extraction of alumina may reach 95-97%. Method 2: the red slime is directed for a fluxless extraction of special cast iron, which is alloyed with vanadium. The slime is then concentrated with alumina and titanium and forwarded for a hydro-chemical processing in conditions identical with those of method 1. Alumina and then titanium are extracted from the residue and the final residue can be used for obtaining cement.

Riese, Wolfram.
POLYVINYL CHLORIDE-ACETATE PLASTISOLS AND ORGANOSOLS. [1959] 5p. [refs. and introduction omitted].
Order from SLA mi$1.80, ph$1.80 59-15654

Trans. of Kunststoffe (West Germany) 1957, v. 47 [no. 3] p. 116-118.

Plastisols, organosols, and plastigels of vinylchloride-acetate resins have uses as metal, textile, and paper coatings, dipping lacquers, chemically resistant coatings, and foam products such as sponges. The customary additives and their proper percentages are described, with comments on the resulting properties.

Schaefer, Harold and Pietruck, Christel.
METHOD FOR THE ENRICHMENT AND SEPARATION OF THE ELEMENTS COLUMBIUM AND TANTALUM. 30 Dec 58, 8p.
Order from LC or SLA mi$1.80, ph$1.80 59-10753

Trans. of German patent 893,197, class 12m, group 9 H 9370 IV b/12m, appl. for 5 Feb 53, granted 3 Sep 53, by W. C. Heraeus G.m.b.H., Hanau/M.

A method for the enrichment and separation of the elements columbium and tantalum is described. The mixture of the penta-halides, especially of the pentachlorides, is subjected to a partial reduction; the reduction products are separated by fractional sublimation. Metals, especially aluminum, are used as reducing agents. The reduction is carried out with flowing hydrogen.

Schmidt, Herbert.
THE USE OF ULTRAVIOLET LIGHT IN THE EXAMINATION OF BITUMINOUS SUBSTANCES. [1958]

30p. 16 refs.
Order from SLA mi$2.70, ph$4.80 59-10924

Trans. of a reprint from Bitumen (Germany) 1954. no. 1.

The literature of past work on the analysis of bituminous substances is reviewed. A description is given of the types of fluorescence which result when asphaltenes, soft asphalts, petroleum resins, and mineral oil components are dissolved in cyclohexane and decane and distributed on chromatographic paper to be excited by UV radiation 3650 to 3660 A.

Sennewald, Kurt and Steil, Karl-Heinz.
ACETALDEHYDE AS THE RAW MATERIAL FOR ACRYLONITRILE. [1959] 29p. 8 refs.
Order from SLA mi$2.70, ph$4.80 59-15309

Trans. of Chemie-Ingenieur-Technik (West Germany) 1958, v. 30, no. 7, p. 440-446.

The process for producing acrylonitrile of high purity from acetaldehyde and prussic acid developed by Arthur Wolfram, whereby lactic acid nitrile is converted directly into acrylonitrile by the addition of phosphoric acid (2:1) at about 600°C is compared to the Dupont process. The yield is 10 to 15% higher than for the acetylene process and saving on materials is possible.

Shan-Yun, Wang and Lin-Yang, Chang.
INVESTIGATION OF THE CAUSE FOR DECREASE IN ACTIVITY. Rept. no. 1 on Studies on the Retention of Activity of Granular Nitrided Fused Iron Catalyst. [1959] 28p. (14 refs. omitted) 7 refs.
Order from SLA mi$2.70, ph$4.80 59-10495

Trans. of Jan Liao Hsüeh Pao (Chinese People's Republic) 1957, v. 2, no. 4, p. 311-322.

Granular fused iron catalyst has been studied for the Fischer and Tropsch synthesis conducted in high speed fixed-bed using water gas as raw material. With increase in particle size its activity could not be retained in syntheses at low temperatures; whereas at high temperatures the occurrence of carbon formation and crushing soon resulted in clogging of the bed. After testing the effect of temperature, pressure, space velocity, regeneration method, catalyst composition, and method of preparation on the retention of activity, it is considered that at high space velocities the activity of granular nitrided fused iron catalyst decreases with time mainly because of the formation of heavy molecular weight products which plug up the pores of the granules. In the meanwhile, the original chemical reaction rate control is changed into a slow reaction internal diffusion control as the reaction rate-controlling step. The key to solving the problem of the retention of fused iron catalyst activity hinges on the improvement of the porous structure.

Stöger, W.
ELECTROLYTIC EXTRACTION OF ZINC. [1959] 6p.
Order from SLA mi$1.80, ph$1.80 59-15346

Trans. of Österreichische Z[ei]tschr[ift] f[ür] Berg- und Hüttenwesen (Austria) 1909, v. 57, no. 1, p. 1-5.

Tagawa, Hiroaki and Sudo, Fumiaki.
KINETICS OF THERMAL DECOMPOSITION OF LIMESTONE IN VARIOUS PRESSURES OF CARBON DIOXIDE. [1959] 15p. 7 refs.
Order from SLA mi$2.40, ph$3.30 59-10513

Trans. of Kogyo Kagaku Zasshi (Japan) 1958, v. 61, no. 8, p. 946-948.

Cubic limestone of approximately 2 g was decomposed in between temperatures of 750° to 1050°C with carbon dioxide gas pressure ranging between 0, 50, 100, 200, and 400 mm Hg; the weight decrements were sought by using a thermobalance, and from these quantities the decomposition velocities were sought. Among the decomposition rate α, decomposition velocity v, time t, and the length of one edge of the cubic sample, 2R, there is approximately a relationship expressed by $vt = R[1 - (1 - \alpha)^{1/3}]$. The velocity obtained from this equation satisfied the Arrhenius equation, but a bending point appeared in the log v - 1/T straight line in the vicinity of 900°C. The apparent activation energy differed considerably in the temperature regions higher and lower than this. In vacuum, this was 18.8 kcal/mol in the higher temperature side and 36.6 kcal/mol in the lower temperature side, and when the carbon dioxide gas pressure increased the activation energy tended to become greater.

Tsu-Hang, Yeh and Kalechits, I. V.
DISTRIBUTION AND INTERCONVERSION OF VARIOUS CLASSES OF NITROGENOUS COMPOUNDS UNDER LIQUID-PHASE HYDROGENATION. Repr. no. 2 on the Transformation of Basic Nitrogenous Compounds under the Condition of Destructive Hydrogenation. [1959] 25p. (2 refs. omitted) 4 refs.
Order from SLA mi$2.70, ph$4.80 59-10496

Trans. of Jan Liao Hsüeh Pao (Chinese People's Republic) 1957, v. 2, no. 4, p. 341-351.

Primary hydrogenation and circulating hydrogenation of >325°C fraction of the low temperature tar residue of Ku Chen Tze were effected in a small continuous liquid-phase hydrogenation apparatus. The results of material balance as well as distribution of Nitrogen in various classes of nitrogenous compounds on hydrogenation indicate that after hydrogenation, strong basic components extractable with 10% H_2SO_4 increased to 213 to 227% of the original, with 126 to 127% below boiling point 325°, and that they consisted mainly of quinoline and iso-quinoline derivatives (192 to 325° fraction constituted 90 to 90.5% of < 325° fraction). In >325° fraction of the product oil 42 to 46% of strong basic nitrogen could be acetylated. Hence, the formation of strong basic components can be explained as resulting from (1) simplification due to destruction of the molecular structures of high polymer nitrogenous compounds and (2) formation of amines due to ring cleavage in nitrogen-containing heterocyclic compounds. As compared with nonbasic components, basic components are more difficult to be reduced to ammonia, but easier to decompose.

Tsu-Wei, Sih and Kalechits, I. V.
LOWER PHENOLS IN THE LIQUID-PHASE HYDROGENATION PRODUCTS OF THE COAL TAR RESIDUE OF KU CHEN TZE. Rept. no. 2 on the Formation of Lower Phenols under the Condition of Destructive Hydrogenation. [1959] 18p. (12 refs. omitted) 2 refs.
Order from SLA mi$2.40, ph$3.30 59-10497

Trans. of Jan Liao Hsüeh Pao (Chinese People's Republic) 1957, v. 2, no. 4, p. 333-340.

Liquid-phase hydrogenation of 100 kg of >325° residual oil fraction of Ku Chen Tze low-temperature coal tar was carried out at 200 atm, 475°, and space velocity of 1.0 in the presence of iron catalyst commonly employed for industrial use. The yield of <325° light oil fraction was 41 kg, which contained 0.48 kg of phenol, 0.30 kg of ortho-cresol, 0.61 kg of meta-cresol, 0.31 kg of para-cresol, and 1.20 kg of xylenolic fraction. Lower phenols totalled 2.9 kg. Unconverted residual oil could further yield lower phenols on circulating hydrogenation. The ratio of meta- to para-cresols in Ku Chen Tze low-temperature coal tar is much lower than the corresponding one in the hydrogenation products of the residual oil. Approximately, the former is 1:1, the latter 2:1. Under the condition of continuous liquid-phase hydrogenation, the stability of three types of isomeric alkylphenols is: meta->ortho->para-.

Wejnarth, Axel.
THE CONDUCTIVE QUALITIES OF SLAG BATH IN ELECTRIC FURNACES. [I]. [1959] 8p. (tables, figs omitted) 1 ref.
Order from SLA mi$1.80, ph$1.80 59-15649

Trans. of Teknisk Tidskrift (Sweden) 1930 [v. 60, no. 8] p. 57-64.

Wejnarth, Axel.
CONDUCTIVE QUALITIES OF SLAG BATH IN ELECTRIC FURNACES. II. [SLAG CONDUCTANTS]. [1959] 30p. (tables 2 figs. omitted) 10 refs.
Order from SLA mi$2.70, ph$4.80 59-15648

Trans. of Teknisk Tidskrift (Sweden) 1930 [v. 60, no. 9] p. 65-74.

Yurovsky, A. Z. and Remesnikov, I. D.
THERMOMAGNETIC METHOD OF CONCENTRATING AND DESULFURIZING COAL. [1959] [10]p. 5 refs. (p. 89-98 of Soviet Metal Technology, v. 2, no. 1)
Order from OTS $5.00

Trans. of Koks i Khimiya (USSR) 1958, no. 12, p. 8-13.

The thermomagnetic method of coal concentration is based on the use of magnetic properties acquired by the mineral admixture in the coal after thermal steam-air treatment, making it possible for pyrite grains to be removed from the coal by magnetic separation. The removal of sulfur and ash components is effected as a result of the magnetic properties of the sulfate compounds of iron which form on the surface of pyrite grains. The possibility that the new coking technique of rapid heating of crushed coal in a turnover chamber at a temperature of 400 to 420° might be combined with the thermomagnetic method is discussed. Experiments indicate that a short-time thermal treatment of coal under conditions approximating those in a turnover chamber causes formation of magnetic film on the surface of pyrite grains. By raising the temperature of the coal in the currently used drying process of small concentrates as well as flotation concentrates, a drastic decrease of ash and sulfur contents may be achieved. The thermomagnetic method may also be used for the concentration of brown coal with high contents of sulfur and ash which cannot be concentrated by water flotation because of its moisture properties. All experimental results attained thus far are tentative.

Civil Engineering

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Consists of abstracts in English.

GIDROTEKHNICHESKOYE STROITEL'STVO (USSR) 1959 [V. 28] NO. 2, P. 1-65 (Hydraulic Engineering Construction). [1959] [20]p. SOV-98-59-2-(1-22)/22.
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Electrical and Electronic Engineering

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Consists of abstracts in English.

*ELEKTRICHESTVO (USSR) 1958, 1959 (Electricity).
Order from OTS $0.80, $4.50/6 mo.
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1959, no. 2, p. 1-96, PB 141 098T-9

Consists of abstracts in English.

ENERGETICHESKIY BYULLETEN' (USSR) 1958, NO. 12, P. 1-30 (Power Engineering Bulletin). [1959] [3]p. SOV-90-58-12-(1-4)/4.
Order from OTS $0.50, $3.00/6 mo. PB 141 083T-11
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

A NEW TYPE OF TOLL CABLE IN GERMANY. [1959] 2p. 3 refs.
Order from SLA mi$1.80, ph$1.80 59-15644

Trans. of [ETZ] Elektrotechnische Zeitschrift. [Ausgabe A. Zentralblatt für Elektrotechnik] (Germany) 1930 [v. 51] no. 27, p. 983-984.

RADIO ENGINEERING, 1958, VOL. 13, NO. 5. Apr 59, 121p.
Order from PP $30.00/year ($15.00/year to individuals)

Trans. of Radiotekhnika (USSR) 1958, v. 13, no. 5, p. 3-81.

RADIO ENGINEERING AND ELECTRONICS, 1958, VOL. 3, NO. 4. Mar 59, 196p.
Order from PP $45.00/year ($22.50/year to individuals)

Trans. of Radiotekhnika i Elektronika (USSR) 1958, v. 3, no. 4, p. 459-584.

*RADIOTEKHNIKA (USSR) 1958, V. 13 (Radio Engineering).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 2, p. 3-88, PB 141 105T-12
No. 12, p. 3-80, PB 141 105T-13

Consists of abstracts in English

VESTNIK ELEKTROPROMYSHLENNOSTI (USSR) 1959 V. [30] NO. 3, P. 1-80 (Herald of the Electrical Industry). [1959 1v. SOV-110-59-3-(1-25)/25.
Order from OTS $0.70, $4.00/6 mo. PB 141 107T-10
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

VESTNIK SVYAZI (USSR) 1959, NO. 2, P. 1-38 (Herald of Communications). [1959] 1v. SOV-111-59-2-(1-27)/27.
Order from OTS $0.60, $3.50/6 mo. PB 141 108T-13
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

Bragin, S. M.
THE DIELECTRIC STRENGTH OF POLYETHYLENE AT HIGH FREQUENCIES. 24 Mar 59, 6p. (5 figs. omitted) 3 refs. JPRS: 1380-N.
Order from OTS $0.50 59-13329

Trans. of *Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1958, v. 22, no. 4, p. 387-391.

Gubkin, A. N. and Skanavi, G. I.
PREPARATION AND PROPERTIES OF NEW ELECTRETS FROM INORGANIC DIELECTRICS. [1959] 20p. 18 refs. T-3008.
Order from LC or SLA mi$2.40, ph$3.30 59-15403

Trans. of *Akad[emiya] Nauk SSSR. Izvest[iya]. Ser[iya Fizicheskaya] 1958, v. 22, no. 3, p. 330-342.

Magnesium titanate and other polycrystalline dielectrics along with KBr monocrystals and other dielectrics were studied to determine from which group of dielectrics electrets could be obtained. Samples were polarized and the surface density of the charges was measured by the electrostatic induction method. Materials such as ordinary glass and KBr monocrystals either did not acquire any charges at all or failed to maintain them for any length of time. $MgTiO_3$ and steatite showed a drop in the hetero-charge and a change of sign after 5 days but the other materials polarized at 20 kV cm^{-1} showed no change of sign. The optimum procedure for polarization of the new electrets was determined and $MgTiO_3$ was used to confirm the theory of Gross with the exception of his applications to carnauba wax.

Guénard, P[ierre] Doehler, O[skar] and others.
NEW OSCILLATOR TUBES WITH A WIDE ELECTRON TUNING BAND FOR VERY HIGH FREQUENCIES. [1959] 4p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-15517

Trans. of Academie des Sciences [Paris] Comptes Rendus, 1952, v. 235 [no. 3] p. 236-238.

Two new carcinotrons were developed. In carcinotron O the beam travels in the vicinity of the structure in a space with potential V. The velocity of the electrons is $\sqrt{2e\,V/m}$, which, with the dispersion characteristic of the structure, fixes the law of variation of the frequency with the voltage. In carcinotron M the beam travels in crossed electric and magnetic fields. The velocity of the electrons is V/dB and the oscillation frequency depends on the electric field and the magnetic field at the same time. Equations are given which represent the synchronizing current in each carcinotron.

Herlet, Adolf and Patalong, Hubert.
BLOCKING PROPERTIES OF ALLOYED SILICON JUNCTION RECTIFIERS. [1959] 6p. 7 refs.
Order from SLA mi$1.80, ph$1.80 59-15851

Trans. of Z[eitschrift fllr] Naturforschung (West Germany) 1955, v. 10a [no. 7] p. 584-586.

Nekrasov, M. M.
RECTIFIERS ON THE BASIS OF CADMIUM IODIDE FILMS. 12 Feb 59, 12p. 5 refs. TN-9.
Order from LC or SLA mi$2.40, ph$3.30 59-14251

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedeniy]. Radiotekh[nika] (USSR) 1958, no. 1, p. 43-48.

Films of cadmium iodide, produced by thermal sublimation on a copper substrate, showed good rectifier properties. Their application as ac rectifiers at 50 is suggested. The CdI_2 film can be separated from the substrate on which it has been produced for the manufacture of rectifier elements. The advantage of such a rectifier is that it can operate up to a temperature of 120° C. The very high rectification coefficient observed (higher than 20,000) and a number of other phenomena indicate that a film, having a different kind of conduction on opposite sides (a layer with electron conduction on the outside and with hole conduction on the substrate side is obtained), is formed as a result of the technology used to produce the thin film. The mechanical strength of the film increases and the electrical characteristics are improved (the rectification coefficient reaches $5 \cdot 10^4$) if a thin layer of HgI_2 is superposed on the CdI_2 film.

Velander, Sten.
PORCELAIN INSULATORS AND INSULATOR PORCELAIN: EXPERIMENTS AND THEORIES ON THE CAUSES OF THE DESTRUCTION OF INSULATORS. [1959] 6p.
Order from SLA mi$1.80, ph$1.80 59-15712

Trans. of Elektroteknikeren (Denmark) 1930, v. 26, no. 13, p. 253-257.

Ville, J.
THEORY AND APPLICATIONS OF THE NOTION OF COMPLEX SIGNAL. [1959] [35]p. T-92.
Order from SLA mi$3.00, ph$6.30 59-10824

Trans. of unidentified mono.

The problem of the composite representation of a signal by a two-dimensional distribution of energy in a domain defined by the time axis and the frequency axis is attached by the use of a distribution, using operators analogous to those used in quantum mechanics. A definition is thus obtained of the instantaneous spectrum of a signal, and of the distribution of the energy corresponding to one frequency. By integration (with respect to time) of the instantaneous spectrum (which varies with time) the spectrum, in the usual sense of the word, is recovered.

Waldkoetter, Erich, Hase, Alfred and others.
METHOD FOR THE PRODUCTION OF SELENIUM DRY RECTIFIERS. [1958] 8p.
Order from LC or SLA mi$1.80, ph$1.80 59-10754

Trans. of German patent 812, 805, Class 21g, group 11_{02}, granted 5 July 51, by Siemens-Schuckertwerke A. G., Berlin and Erlangen.

A metal (metal alloy) is used for the counterelectrode, with an impurity increasing the blocking resistance. The selenium layer is precrystallized simultaneously with its application on the base electrode by a corresponding choice of temperature conditions, by which the conterelectrode is applied. The selenium layer is then converted into the best-conducting crystalline state by a heat treatment. The main advantage of this method is that it prevents the aging of the rectifier and subsequent increases in the forward resistance.

Mechanical Engineering

ENERGETIK (USSR) 1959 (Power Engineer).
Order from OTS $0.60, $3.50/6 mo.
Foreign $0.85, $5.00/6 mo.

No. 1, p. 1-40, PB 141 084T-13
No. 4, p. 1-40, PB 141 084T-14

Consists of abstracts in English.

TEPLOENERGETIKA (USSR) 1959 [V. 6] NO. 4, P. 3-96 (Heat Power Engineering). [1959] 1v.
SOV-96-59-4-(1-21)/21.
Order from OTS $0.70, $4.00/6 mo. PB 141 089T-12
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

Khripushin, Z. V.
UNIVERSAL DUST EXHAUSTING EQUIPMENT (Universal'naya Eksgausternaya Ustanovka) tr. by E. Feigl. [1959] [5]p. Trans. no. 2968.
Order from LC or SLA mi$1.80, ph$1.80 59-15039

Trans. of Derevoobrabatyvayushchaya Promyshlennost' (USSR) 1955, v. 4, no. 3, p. 24-25.

A new type of exhaust system with a mechanical transport system within the main tube for the removal of woodshavings and dust is described. The plant has the disadvantages of unwieldiness and difficulty of repair. An exhaust with a cylindrical collector 1.2 m long and 900 mm diameter through which the shavings fall into a tube leading to the blower has been developed. This device is not affected by the position of benches in the shop.

Sanitation and Safety Engineering

CIVIL DEFENSE IN CHEMICAL AND BACTERIOLOGICAL WARFARE. 8 Aug 56 [49]p. AF 1022836.
Order from LC or SLA mi$3.30, ph$7.80 59-16953

Summary trans. of mono. Uchebnoye Posobiye po MPVO (Training Manual on Local Air Defense) Moscow, 1956.

The physiological effects of yperite, lewisite, hydrocyanic acid, tabun, adamsite and chloracetophenone are described. The characteristics of bacteriological weapons are summarized: it is noted that the information in this chapter is based on material obtained through the open foreign press. Infectious diseases which one must expect to combat include plague, tularemia, brucellosis, glanders, anthrax, cholera, botulism, typhus, encephalitis and psittacosis. Detailed instructions are given for the use of civilian gas masks. Protective clothing for individuals and protective packaging for foodstuffs are considered. Methods of disinfestation, deratting, first aid, etc., are described. Instructions are given for establishing the boundaries of an epidemic nidus, and for the maintenance of quarantine.

Arkhipov, M. and Dorofeyev, A.
ENGINEERING DEFENSIVE MEANS AGAINST ATOMIC WEAPONS (Inzhynernyye Sredstva Zashchity ot Atomnogo Oruzhiya). 29 Oct 56 [5]p. AF 1045140.
Order from LC or SLA mi$1.80, ph$1.80 59-16957

Summary trans. of Kryl'ya Rodiny (USSR) 1956, no. 5, p. 21.

This paper deals in elementary terms with the construction and improvization of shelters for use under radiological attack.

Gnedin, A.
ANTI-ATOMIC DEFENSE OF PERSONNEL AND AVIATION MATERIEL. (Protivoatomnaya Zashchita Lichnogo Sostava i Aviatsionnoy Tekhniki). 9 Aug 55 [9]p. AF 682115.
Order from LC or SLA mi$1.80, ph$1.80 59-16952

Summary trans. of Vestnik Vozdushnogo Flota (USSR) 1955, no. 5, p. 52-57.

Measures of anti-atomic defense are described which ensure the constant combat readiness of an aviation unit in any situation.

Krupina, A. P., Tyukov, D. M. and Ponomareva, A. N.
BACTERICIDAL EFFECTIVENESS OF SUN RAYS IN POLLUTED ATMOSPHERIC CONDITIONS. 16 Feb 59, 4p. (2 figs omitted) JPRS: L-644-N.
Order from OTS $0.50 59-13203

Trans. of Gigiyena i Sanitariya (USSR) 1954 [v. 19] no. 8, p. 15-18.

The direct action of solar radiation on Staphylococcus aureus cultures, under conditions of atmospheric contamination, led to significant suppression of the cultures at an irradiation level of 12 to 13 mikrobakts/sq. cm. (A bakt is a bactericidal flux with a wave length of 245 to 256 millimicrons and a power of 1 watt. A mikrobakt is 0.001 of a bakt.) To attain a comparable bactericidal effect when the Petri dishes, other things being equal, are covered with window glass, requires a six-fold increase in the amount of radiation. Isolation of cultures of Staphylococcus aureus subjected to irradiation disclosed that they retain their hemolytic properties and plasma-coagulative activity, but that they increase in cellular dimensions and change their mode of distribution on the microscopic slide.

Lenshin, V. T.
SULFUR DIOXIDE IN THE ATMOSPHERE OF LENINGRAD. 22 Apr 59, 6p. 8 refs. JPRS: L-740-N.
Order from OTS $0.50 59-13434

Trans. of Gigiyeniya i Sanitariya (USSR) 19[58], no. 8, p. 57-59.

The concentration of SO_2 in the surface layer of air in the cold half of the year is higher in Leningrad than in the warm half because the movement of air is reduced in the winter, and there is almost always a surface radiation inversion. The increase in SO_2 concentration, which occurs with a one degree temperature drop during the cold period, exceeds by three fold the corresponding increase in concentration in the warm period. In large industrial areas, avoidance of the formation of toxic fumes may be achieved by burning only high quality fuels with low sulfur content at night and early morning especially during cold and foggy weather.

Mokhov, L. A., Udalov, Yu. F., and Khalturin, V. S.
A SPECIAL INDICATOR TUBE FOR RAPID DETERMINATION OF OXIDES OF NITROGEN IN THE AIR OF INDUSTRIAL ESTABLISHMENTS. [1959] 4p.
Order from ATS $6.50 ATS-72L31R

Trans. of *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1959, v. 32, no. 2, p. 452-453.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Lőrincz, Franz and Kneffel, Paul.
SALMONELLOSIS AND THE MEAT INDUSTRY. [1959] 16p. 12 refs.
Order from SLA mi$2.40, ph$3.30 59-15344

Trans. of Fleischwirtschaft (Germany) 1958, v. 10 [no. 3] p. 162-164.

The effect of NaCl and of substances used in curing brines (KNO_3 and $NaNO_2$) on Salmonella cultures was studied to determine the effect of salting and curing on these microorganisms in meat products. Salt tolerance of Salmonella was shown to be much greater in meat

broth than in aqueous solution. Tolerance was greater in cool storage than at room temperature. Artificially inoculated sausage showed the presence of Salmonella at the core up to 91 days, near the surface up to 77 days. Salmonella were destroyed earlier in muscle than in meat protected by fatty tissue. Results obtained in tests using scalded sausages indicate that Salmonella are destroyed in the usual manufacturing process.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

Batel, W.
COMMINUTION IN VIBRATORY BALL MILLS. [1959] 8p. (14 figs. omitted) 13 refs.
Order from SLA mi$1. 80, ph$1. 80 59-15836

Trans. of Chemie-Ingenieur-Technik (West Germany) 1958, v. 30, no. 9, p. 567-572.

Processes occurring in a model ball mill were recorded by means of a Fastex camera, and analyzed at normal speed or with a 50 or 80-fold reduction. It was determined that as a result of the movements of the balls, air flows are caused which remove the fine ground material from the comminution zones: this can be prevented by evacuating the container. Degree of comminution is in proportion to the impact and shock processes as governed by the expulsion processes.

Baykov, A. A. and Goncharskiy, L. A.
GAS-DISCHARGE PICK-UP (Gazorazryadnyy Datchik). June 57 [3]p. C. T. S. no. 341.
Order from LC or SLA mi$1. 80, ph$1. 80 59-14181

Trans. of Priborostroyeniye (USSR) 1956, no. 4, p. 31.

A pick-up is described which is intended for the registration of pressures inside the cylinder of a steam engine or an internal combustion engine, with the aid of an electromagnetic or cathode-ray oscillograph. The important feature is its high sensitivity, so that it can be used for registering the dynamic pressures inside the cylinders of a steam engine without signal amplification. This has been made possible by using a mechanically controlled ion valve, as a sensitive element. In this valve a longitudinal method of controlling the glow or pulsed gas discharge, occurring between its two cold electrodes, is utilized.

Schwenninger, O.
DESIGN OF WOODWORKING MACHINERY. [1959] 12p. (28 figs. omitted) 8 refs
Order from SLA mi$2. 40, ph$3. 30 59-15349

Trans. of V[erein] D[eutscher] I[ngenieure]. Zeitschrift (Germany) 1931, v. 75, no. 2, p. 33-40.

The problems encountered in the design of woodworking machinery are reviewed, with examples of recent developments cited. One of the influential factors is the tendency towards higher cutting speeds, the use of individual electrical drives, and automatic or semi-automatic operation. Items specifically mentioned are band saws, multi-blade saws for edging boards, cross-cutting saws, double circular saws for cutting to length, finish-planers with automatic feed, and multi-roller sanding machines.

Shchirenko, N. S., Polovchenko, I. G. and others.
WORK EXPERIENCE OF A NEW TYPE BURDEN DISTRIBUTOR (Opyt Raboty Novogo Raspredelitelya) [1959] [9]p. 1 ref. (p. 47-55 of Soviet Metal Technology, v. 2, no. 1)
Order from PS $5. 00

Trans. of Stal' (USSR) 1958 [v. 18] no. 12, p. 1066-1071.

A burden distributor with a rotating intermediate funnel was tested under industrial conditions at a blast furnace with a volume of 997 cu m. The characteristic feature of the distributor is the elimination of the rotation of the small bell. During the development of the new distributor, intermediate funnels with various outlets were tested, the best results being obtained when the rotating funnel had 2 outlets.

Yakobson, V.
CONSTRUCTION OF THE AUTOMATIC DEVICES FOR AMMONIA REFRIGERATION EQUIPMENT; THE "RDA" PRESSURE REGULATOR AND THE "TRVA" THERMOREGULATING VALVE (Kak Ustroyeny Avtomaticheskiye Pribory dlya Ammyachnykh Kholodil'nykh Ustanovok: Regulyator Davleniy RDA i Termoreguliruyushchiy Ventil TRVA) tr. by M. Slade. 19 Sep 56 [8]p. Trans. no. 2893.
Order from LC or SLA mi$1. 80, ph$1. 80 59-15152

Trans. of Kholodil'naya Tekhnika (USSR) 1954, v. 31, no. 2, p. 74-76.

The RDA pressure regulator consists of a regulator of the suction pressure and a maximum-pressure circuit breaker: these instruments have housing and electric contacts in common. The apparatus structurally resembles the RD pressure regulator for freon equipment, but it is made of materials resistant (Machinery, Fabrications, and Accessory to ammonia. The TRVA thermoregulating valve is designed to maintain the liquid ammonia in the evaporators at the required level by regulating the inflow of ammonia in accordance with the thermal load. It maintains a constant superheating of the vapor (2 to 10° C) at the outlet of the evaporator. There are 3 TRVA models in production with outputs of 10000, 20000 and 40000 cal/hr respectively.

Manufacturing Equipment and Processes

*AVTOMATICHESKAYA SVARKA (USSR) 1958, 1959 (Automatic Welding).
Order from OTS $0. 50, $3. 00/6 mo.
Foreign $0. 75, $4. 50/6 mo.

1958, v. 11, no. 12, p. 3-96, PB 141 125T-11
1959, v. 12, no. 2, p. 3-99, PB 141 125T-12

Consists of abstracts in English.

STANKI I INSTRUMENT (USSR) 1958 [V. 29] NO. 8, P. 1-45 (Machine Tools and Tools). [1959] 1v. SOV-121-58-8-(1-29)/29.
Order from OTS $0.60, $3.50/6 mo. PB 141 121T-4
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

SVAROCHNOYE PROIZVODSTVO (USSR) 1959 (Welding Practice).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No 1, p. 1-47, PB 141 138T-13
No. 4, p. 1-48, PB 141 138T-14

Consists of abstracts in English.

VESTNIK MASHINOSTROYENIYA (USSR) 1958 [V. 38] NO. 12, p. 3-83 (Herald of Machine Building). [1959] 1v. SOV-122-58-12-(1-32)/32.
Order from OTS $0.80, $4.50/6 mo. PB 141 122T-5
Foreign $1.05, $6.00/6 mo.

Consists of abstracts inEnglish.

Beke, B.
CLOSED CIRCUIT GRINDING OF CEMENT. [1959] [33]p. 24 refs.
Order from SLA mi$3.00, ph$6.00 59-15693

Trans. of Zement-Kalk-Gips (West Germany) 1958, v. 11, no. 12, p. 529-543.

A theoretical evaluation of experimental evidence indicates that in the case of open-circuit grinding the percentage retained on any particular test sieve can be represented as a function of the throughput by a curve which has a point of inflection. In the grinding of cement, as high as possible a proportion of the particle size fraction between 3 and 30 microns is required. This object can be economically achieved by closed-circuit grinding with a low particle size limit for classification and with a uniformity index of approximately 0.8 to 0.9.

Brazhinikov, N. I. and Krym, I. A.
ULTRASONIC FLAW DETECTION OF EXTRUSION DEFECTS WHEN EXTRUDING BARS FOR TUBES (Ul'trazvukovaya Defektoskopiya Pressutyazhiny v Pressovannykh Prutkakh-Zagotovkakh dlya Trub) [1959] [5]p. 3 refs. (p. 65-69 of Soviet Metal Technology, v. 2, no. 1)
Order from PS $5.00

Trans. of Tsvetnyye Metally (USSR) 1958 [v. 31] no. 12, p. 67-69.

An ultrasonic pulse flaw detector is described which is supplied with a special scanner, designed for the sending and subsequent reception of the reflected pulses of ultrasonic vibrations.

Bruno, Luigi.
CONSTRUCTION AND OPERATION OF OPEN HEARTH FURNACES FIRED BY METHANE AND FUEL OIL. 20 Apr 59 [34]p. 2 refs.
Order from SLA mi$3.00, ph$6.30 59-15837

Trans. of Revue de Métallurgie (France) 1958, v. 55 [no. 12] p. 1113-1125.

Bykhovsky, D. G.
A METHOD OF RADIOGRAPHIC EXAMINATION OF SPOT WELDED DURALUMIN ALLOYS. [1959] [3]p. (p. 21-23 of Soviet Metal Technology, v. 2, no. 1)
Order from PS $5.00

Trans. of Zavodskaya Laboratoriya (USSR) 1958 [v. 24] no. 12, p. 1458-1459.

Grodzinski, Paul.
EFFECT OF STANDARDIZATION ON LOT-SIZE AND PRICE. [1959] 5p. (4 figs. omitted) 2 refs.
Order from SLA mi$1.80, ph$1.80 59-15632

Trans. of Maschinenbau (Germany) 1931, v. 10, no. 2, p. 37-39.

The relationship between fixed prices, distributed prices and lot-size under the effect of standardization is examined closely from the standpoint of graphical representation.

Kreshchanovskiy, N. S., Prosvirin, V. I., and Ginzburg, Ye. S.
INFLUENCE OF BORON ON THE PROPERTIES OF CAST TYPE Kh15N25 AUSTENTIC CHROMIUM-NICKEL STEEL (Vliyaniye Bora na Svoystva Litoy Austenitnoy Khromonikelevoy Staly Tipa Kh15N25). Jul 57 [10]p. 7 refs. C. T. S. no. 331.
Order from LC or SLA mi$1.80, ph$1.80 59-14175

Trans. of Liteynoye Proizvodstvo (USSR) 1954, no. 5, p. 16-19.

Lopatko, I. F. and Usoskin, G. I.
A METHOD OF MEASURING THICKNESSES WITH THE USE OF AN ULTRASONIC PULSE THICKNESS GAGE. [1959] [5]p. (p. 25-29 of Soviet Metal Technology, v. 2, no. 1)
Order from PS $5.00

Trans. of Zavodskaya Laboratoriya (USSR) 1958 [v. 24] no. 12, p. 1464-1467.

An ultrasonic pulse thickness gage is described which was developed by the Ul'yanov Electrical Engineering

Institute of Leningrad for the measurement of the thicknesses of articles having only a single accessible surface (ship hulls, autoclave walls, etc.). The range of measured thicknesses for this device is from 1/2 to 30 mm, with error no greater than 2% for thicknesses from 2 to 5 mm, and no greater than 1% for thicknesses from 5 to 30 mm. The instrument makes it possible to conduct measurements on articles the inactive areas of which are strongly corroded, or in which there is a considerable non-parallelism of the sides.

Lueg, Werner, and Treptow, Karl-Heinz.
TEMPERATURE MEASUREMENTS DURING WIRE DRAWING. PART II. [1959] 28p. 26 refs.
Order from SLA mi$2.40, ph$3.30 59-15077

Trans. of Stahl und Eisen (West Germany), 1957, [v. 77, no. 13] p. 859-867.

A patented steel wire with 0.58%C and seven normal annealed wires with 0.34 to 0.99%C were investigated Lime and alkali were used as lubricant carriers; machine oil, needle soap and electrographite, as lubricants. The drawing forces were determined using a pressure cell equipped with extensometer strips by drawing wire partly in a single pass, part in a sequence of passes. The drawing speeds were from 0.00067 to 3 m/sec. For speeds over 0.4 m/sec a single draw bench was used; under 0.4 m/sec, a 25t draw bench. Results indicated that within a drawing test for each maximum and minimum value of the temperature, there is a corresponding value for the drawing force. The temperatures for a single pass within the drawing sequence were subject to marked fluctuations. During the first pass, small wire lengths produced an equilibrium temperature, during the last pass an equilibrium temperature was still not attained in drawing 150 meters. In the tests using the seven normal annealed wires an approximately linear relationship of temperature to increasing carbon content and tensile strength was found. The tests at various drawing speeds were plotted for the same drawn length and also for the same drawing time. In both cases, the general formula $t=f(\sqrt[3]{v})$ describes the relationship between the drawing speed v and the temperature t. The changes of the drawing force with speed can be explained by the influence of the initial temperature on the properties of the lubricant film. The tensile strength of the drawn wire increases with drawing speed. This strength increase is subject to the equilibrium temperatures after drawing which corresponds in magnitude to the tempering temperature in the region of embrittlement.

Matsumoto, Katsuchika, Yoshikawa, Shinsuke, and Akatsuka, Eikichiro.
ANALYSIS OF MELT EXTRUSION MECHANISM. [1959] 20p. 9 refs.
Order from SLA mi$2.40, ph$3.30 59-15497

Trans. of Kogyo Kagaku Zasshi (Japan) 1958, v. 61, no. 11, p. 1436-1439.

To elucidate the various elements which become the bases in the designing of extrusion molders for high polymer resins in powder and granular state, theoretical analyses were made of the delivery mechanism, and pressure-distribution, of various parts of the extruder. Previous conclusions regarding the mechanism of powder delivery by the screw and the theory of viscous flow were experimentally verified. In the powder-form region, the resin advanced in between the screw threads nearly as one body, and became somewhat displaced in the region close to the pushing side of the screw thread. In the completely melted region, the pressure gradient was calculated by assuming the characteristics of the resin to be $D=\frac{1}{\pi}2$, and the results agreed well with the experimentally measured results. In the compressed region, the powder layer had melted and was co-existent in a state surrounded by the resin in a viscous flow-state. The pressure gradient of this portion could be calculated by correcting the depth of the screw channel.

Nazarov, S. T. and Panov, Yu. P.
ULTRASONIC INSPECTION OF THE QUALITY OF CONTACT SPOT AND SEAM WELDING (Ul'trazvukovoy Kontrol' Kachestva Kontaktnoy Tochechnoy i Shovnoy Svarki) [1959] [5]p. 2 refs.
(p. 5-9 of Soviet Metal Technology, v. 2, no. 1)
Order from PS $5.00

Trans. of Zavodskaya Laboratoriya (USSR) 1958 [v. 24] no. 10, p. 1214-1217.

An original method for the ultrasonic inspection of spot and seam welds in sheet joints is described which is applicable to practically any material (steel, aluminum, titanium, etc.) In all cases it is possible to determine poor penetration and the actual diameter of the spot center with an accuracy of 0.5 mm. It is also possible to expose pores and cracks with areas above 1.5 mm^2. A special probe is applied which consists of a plexiglas prism to which 2 piezoelements are attached. The device is used in conjunction with the UZD-7n model flaw detector developed by the Central Scientific Research Institute of Ferrous Metallurgy.

Rassmann, G.
PERMEABILITY MEASUREMENTS ON STRIP HAVING A THICKNESS OF 0.1 TO 0.01 mm (Permeabilitätsmessungen an Bändern von 0.1 bis 0.01 mm Dicke). [1959] [13]p. 8 refs.
Order from SLA mi$2.40, ph$3.30 59-15196

Trans. of Z[eitschrift] f[ür] Metallkunde (Germany) 1944, v. 36, no. 6, p. 131-135.

The relationship of permeability to strip-thickness between 0.1 and 0.01 mm was investigated on a nickel-iron alloy containing 50% Ni, mu-metal, and an iron alloy containing 3.5% Si. After deformations of 70 and 96%, the 50% nickel-iron alloy shows a maximum permeability decreasing with reduction of strip-thickness, both for the hard-rolled and heat-treated condition. The initial permeability is independent of the strip-thickness after heat-treating at 1100°. The influence of degree of deformation outweighs that of strip-thickness. With increased heat-treating temperature the effect of the degree of deformation is eliminated.

Sherstyuk, V. N.
THE INFLUENCE OF DOUBLE-ARC WELDING PROCEDURE ON THE FUSION OF THE ELECTRODES AND THE BASE METAL [Vliyaniye Rezhima Dvukhdugovoy Svarki na Plavleniye Elektrodov i Osnovnogo Metalla]. [1959] 6p.
Order from ATS $8.35 ATS-73L30R

Trans. of Svarochnoye Proizvodstvo (USSR) 1958, no. 11, p. 15-16.

Beads were welded by two arcs in one welding bath with the use of a low-carbon "Sv-08A" electrode rod 2 mm in diameter and "AN-348A" flux. The use of 215 - 600 a current on the first arc and 209 - 520 a current on the second arc make it possible to weld metal 3 - 30 mm thickness.

Shevakin, Yu. F. and Rytikov, A. M.
COLD ROLLING OF SHAPED TUBES (Kholodnaya Prokatka Profil'nukh Trub) [1959] [11]p. 4 refs. (p. 71-81 of Soviet Metal Technology, v. 2, no. 1)
Order from PS $5.00

Trans. of Tsvetnyye Metally (USSR) 1958 [v. 31] no. 12, p. 70-77.

Improved methods of grooving which have been adopted in industry have increased the output of mills manufacturing shaped tubes more than 100%. The quality of the rolled tubes and the durability of the working tool have also improved. Fabricated tubes can be produced with square or round holes of different dimensions from round billets with lengths from 20 to 50 m. The accuracy of manufacture conforms to All-Union State Standards.

Weiss, A.
BRIGHT-, GRAY-, AND BLACK- CHROMIUM PLATING. [1959] 3p. (6 refs. omitted).
Order from SLA mi$1.80, ph$1.80 59-15715

Trans. of Oberflächentechnik (Germany) 1936 [v. 13] 5 May, p. 101-102.

Transport, Traction and Hoist Facilities

AVTOMOBIL'NAYA PROMYSHLENNOST' (USSR) 1959, NO. 2, P. 1-48 (Automobile Industry). [1959] [13]p. SOV-113-59-2-(1-20)/20.
Order from OTS $0.50, $3.00/6 mo. PB 141 110T-12
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

Chiesa, A.
EFFECTS OF TIRE INFLATION PRESSURES ON ROAD COMFORT. [1959] [16]p. 6 refs.
Order from SLA mi$2.40, ph$3.30 59-15358

Trans. of Rev[ue] Gén[érale du] Caoutchouc, 1958, v. 35, no. 11, p. 1379-1384.

Various methods are presented for the analysis and synthesis of complex vibratory phenomena such as those felt by the occupants of a moving vehicle. The advantages of these methods are the following: they furnish synthetic and quantitative values independently of the duration and the complexity of the phenomena; they are entirely automatic because of the use of electronic apparatus.

Fitterman, B. and Dolmatovskiy, Yu.
SELECTION OF A TYPE OF DOMESTIC MINIATURE MOTOR VEHICLE (O Vybora Tipa Otechestvennogo Mikrolitrazhnogo Avtomobilya) tr. by S. E. [1959] [13]p. (9 figs. omitted). H-2950.
Order from OTS $0.50 59-21016

Trans. of Avtomobil'nyy Transport (USSR) 1958 [v. 36] no. 8, p. 38-43.

Specifications are proposed for a miniature car better than the Moskovich 407 and 401 models, and presently available models are described.

Sirotkin, L. N.
MODERNIZED VEHICLES OF THE YAROSLAV MOTOR VEHICLE FACTORY (Modernizirovannye Avtomobili Yaroslavskogo Avtozavoda) tr. by Hutcheson. [1959] 7p. (5 figs. omitted) H-2194.
Order from OTS $0.50 59-11910

Trans. from Avtomobil'naya Promyshlennost' (USSR) 1958, no. 6, p. 7-9.

Trucks designed for load capacities up to 12 tons have been improved and standardized by the motor vehicle factory at Yaroslav. These improvements are described.

Thuengen, H. von
THE ONE-WAY CLUTCH; SPECIAL CONSTRUCTION AND APPLICATION EXAMPLES FOR AUTOMOTIVE USE (Der Freilauf; Sonderkonstruktion und Anwebdungsbeispiele im Kraftfahrzeug). [1958] [30]p. (foreign text included).
Order from SLA mi$2.70, ph$4.80 59-10138

Trans. of ATZ Automobiltechnische Zeitschrift (Germany) 1957, v. 59, no. 1, 1-7.

The basic construction of the three main types of one-way clutches is described, namely with one wedge, with two wedges and with a double wedge. These devices can be used either as radical or as axial clutches, Operation of a number of different designs is illustrated and described. A mathematical analysis is given of friction roller type one-way clutches and their application in drive lines. Discussions are included on disconnectable and reversible clutches and their application in mountain anti-roll devices, and two examples of one-way clutches which can be unclutched under load.

MATERIALS

Brandes, Günter.
EXPERIENCES IN THE STRUCTURE GROUP ANALYSIS BY MEANS OF INFRA-RED SPECTROSCOPY. Rept. no. 2 on The Structure Group Analysis of Petroleum Fractions. [1959] 9p. 4 refs.
Order from SLA mi$1.80, ph$1.80 59-10722

Trans. of Erdöl und Kohle (West Germany) 1958, v. 11 [no. 10] p. 700-702.

Based on a previously described method (Brennstoff-Chem. 37: 263, 1956) for the determination of structure group analysis values of mineral oil fractions from infra-red spectroscopic data, a series of pointers are given with respect to the applicability regions and the reproducibility. These pointers relate, as does the whole method, to pure mineral oil products and not to mixtures with relatively large amounts of non-mineral oil systems, since they assume the applicability of statistical averaging, as in the n-d-M method. However, they permit a fast and sure determination of the structure characteristics of a large substance-group and may contribute to the knowledge and evaluation of this group.

Hori, Motoo, Hayakawa, Sohachiro and others.
MEASUREMENTS FOR POROSITY AND DEGREE OF SINTERING OF CEMENT-CLINKERS BY γ-RAY- AND ULTRASONIC WAVE ABSORPTION. Thesis. [1959] 23p. 6 refs.
Order from SLA mi$2.70, ph$4.80 59-10516

Trans. of Kogyo Kagaku Zasshi (Japan) 1958, v. 61, no. 6, p. 638-641.

To estimate the degree of sintering of amorphous bodies such as cement-clinkers rapidly and continuously, γ-ray absorptions and ultrasonic wave absorptions of samples consisting of packed sintered particles were measured and the results were compared with measured results for bulk density, apparent density, porosity [air-hole rate], and strength of solid-binding, obtained by the conventional methods. For γ-ray absorption, a more or less perfectly proportional relationship was found between the γ-ray absorption coefficient and bulk density of samples of the same composition regardless of the shape of the packed particles, their granularity, or density; it was therefore possible to estimate the bulk density directly from the experiment results of γ-ray absorption. However, it was necessary to substitute the spaces in between the packed particles with a suitable medium in order to estimate the apparent density of the packed sample itself. For ultrasonic wave absorption, it was impossible to obtain a simple relationship since the measurement results varied greatly depending on the sample granularity. However the absorption coefficient generally decreased as the degree of sintering increased.

Rüsch, H.
PHYSICAL PROBLEMS IN THE TESTING OF CONCRETE. [1959] 21p. 2 refs.
Order from SLA mi$2.70, ph$4.80 59-15694

Trans. of Zement-Kalk-Gips (West Germany) 1958, v. 12, no. 1, p. 1-9.

Investigations into the time behaviour of the stress-strain diagram of concrete show that the strength under sustained load is 75% of the usual strength obtained under short-time application of load. From measurements of the change of volume of concrete, of the absorption of ultrasonic waves, and of the noise produced in the course of loading, it appears that in the usual short-time test considerable disruption of the internal structure of the concrete occurs already at about 75% of the failure load.

Ceramics and Refractories

STEKLO I KERAMIKA (USSR) 1958 (Glass and Ceramics).
Order from OTS $0.60, $3.50/6 mo.
Foreign $0.85, $5.00/6 mo.

1958, no. 11, p. 1-48, PB 141 068T-9
1959, no. 1, p. 1-48, PB 141 068T-11
1959, no. 2, p. 1-48, PB 141 068T-10

Karyakin, D. I. and Pyatikop, P. D.
PETROGRAPHIC STUDY OF THE INFLUENCE OF IRON OXIDES ON CHROME SPINELLIDE ON HEATING (Petrograficheskoye Issledovaniye Vozdeystviya Okislov Zheleza na Khromshpinelidy pri Nagrevanii). June 57, 4p. (3 figs. omitted) 10 refs. C. T. S. no. 339.
Order from LC or SLA mi$1.80, ph$1.80 59-14185

Trans. of Ogneupory (USSR) 1956, v. 21, no. 4, p. 166-170.

When heating chrome spinellides with up to 10 per cent ferric oxide in an oxidising atmosphere the oxide enters quantitatively into the structure of chrome spinellide in the form of a solid solution. On slow cooling excess ferric oxide partially separates out as needle shaped hematite and is subsequently transformed into magnetite. On rapid cooling, or when heating the samples about 1700° no separation of free ferric oxide in the grains of chrome spinellide takes place. On heating chrome spinellide with admixed ferric oxide in a reduced atmosphere initially an assimilation of the oxide into the chrome spinellide structure in the form of a solid solution takes place and subsequently reduction to the metal occurs.

Margulis, O. M., Gin'yar, Ye. A., and Sakovsky, D. Ya.
IMPROVING THE DURABILITY OF COKE FURNACE ROOFS. [1959] [5]p. 4 refs. (p. 83-87 of Soviet Metal Technology, v. 2, no. 1)
Order from PS $5.00

Trans. of Koks i Khimiya (USSR) 1958, no. 11, p. 26-29.

To develop coke oven brickwork with increased durability, experiments were conducted in the manufacture of bricks high in chamotte content. The chamotte was made from 100% kaolin by a plastic method with subsequent roasting at 1500° followed by an 8-hr soaking at an end temperature. The high-chamotte mass was ground on crusher rollers, and low-plastic Vladimir kaolin was added as a binder. The bricks were formed by pneumatic ramming, hearth dried, then roasted in a periodic furnace at 1460° and soaked for 8 hr. The experimental bricks, after 3 1/2 to 4 years of service, show less defects than chamotte bricks of plastic molding.

Sklyarov, N.
REFRACTORY ALLOYS. 19 May 59, 7p.
Order from LC or SLA mi$1.80, ph$1.80 59-15406

Trans. from [Sovetskaya Aviatsiya] (USSR) 1959, 6 May.

The seven-year plan to develop the state economy foresees a broad development of metals that possess strength at high operating temperatures. Work that has been done in this direction is reviewed and future requirements are listed.

Leather and Textiles

SOLVENT MIXTURE FOR POLYACRYLONITRILE SPINNING SOLUTIONS. [3 Apr 59] 4p.
Order from RIS $7.00 RIS rept. 54028

Trans. of German patent application V 7016 (29b, 3/65), filed 18 Mar 54, pub. 23 Feb 56, by Vereinigte Glanzstoff-Fabriken A. G., Wuppertal-Elberfeld.

A process is described for preparing spinning solutions of polyacrylonitrile or acrylonitrile copolymers. The polymers are dissolved in a mixture of dimethylformamide with an acetal.

Gorshkova, A. G.
A NEW FABRIC FOR COVERING THE WET ROLLERS OF OFFSET PRINTING MACHINES. 8 Apr 59, 14p. (2 figs. omitted) 1 ref. JPRS: L-720-N.
Order from OTS $0.50 59-13365

Trans. of [Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Poligraficheskoy Promyshlennosti i Tekhniki]. Sbornik Nauchnykh Rabot (USSR) 1956, v. 7, p. 120-131.

A dense 2-layer fabric of twisted yarn with not less than 240 threads to the woof and of uniform thickness has been developed for use in the polygraphic industry. Experimental specimens which were subjected to impregnation with specially precipitated stearic and silicic acids met requirements for high moisture absorption, capillarity, and endurance for 15 to 20 machine shifts during printing with zinc patterns and 24 to 26 shifts during printing with bimetallic printing patterns.

Kamogawa, Hiroyoshi.
COPOLYMER COMPOSITIONS IN EMULSION COPOLYMERIZATION OF ETHYL ACRYLATE AND ACRYLAMIDE. [1959] 15p. 4 refs.
Order from SLA mi$2.40, ph$3.30 59-10514

Trans. of Kogyo Kagaku Zasshi (Japan) 1958, v. 61, no. 8, p. 1024-1027.

The relationship was investigated between the theoretical values calculated from water-layer and oil-layer monomer compositions assuming that solution polymerization occurred. Consideration was given to the difference of swelling-dissolving properties of the two monomers relative to the particles of the polymer formed when using such substances as acrylic acid ester, wherein mutual solubility between monomer and polymer is high. The composition of the initial period polymer could be adjusted across a fairly wide range by adding a suitable quantity of some additive which would alter the monomer composition in the water layer and the swelling property of the polymer particles produced, such as acetone, lower alcohols, and dioxane.

Kamogawa, Hiroyoski.
EMULSION COPOLYMERIZATION OF ETHYL ACRYLATE AND ACRYLAMIDE UNDER CO-EXISTENCE OF WATER-SOLUBLE COMPONENTS. [1959] 14p. 6 refs.
Order from SLA mi$2.40, ph$3.30 59-10515

Trans. of Kogyo Kagaku Zasshi (Japan) 1958, v. 61, no. 8, p. 1027-1030.

The influence of water-soluble additives was investigated in the emulsion copolymerization of ethyl acrylate and acrylamide. When protective colloids such as PVA and CMC were used, the composition of the initial period polymer was close to that by water-system polymerization. High polymer additives generally raise the viscosity of the emulsion, but an emulsion with the lowest viscosity was obtained when the monomer composition was about 10% acrylamide. An unnecessarily large amount of additive increased the emulsion viscosity unnecessarily. Among high polymer additives, CMC demonstrated considerable non-Newtonian behavior even at emulsion concentration of about 5%, and the relationship equation of $F^N = \eta'G$ could be applied, where F represents shearing stress, η' is viscosity at unit shear stress, and G is rate of shear. As with viscosity, the coagulation value had a maximum in the vicinity of 10% acrylamide, and when CMC was used this became about twice the other values. In certain cases the coagulation value dropped when the additive quantity was increased. The addition of resin-finishing agents such as urea decreased the coagulation value greatly.

Musso, Pompilio and Guzzetta, Giuseppe.
PRODUCTION OF POLYOLEFIN FILAMENTS BY EXTRUSION. [17 Apr 59] 6p. 2 refs.
Order from RIS $13.00 RIS rept. 96976

Trans. of Belgian patent 561 915, 25 Oct 57, by Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan. Priority: Italian patent application 15 851, filed 26 Oct 56.

A process is described for producing (1) A continuous stretch-oriented filament formed by melt extrusion of a highly crystalline butene polymer or of a mixture of a highly crystalline butene polymer and a highly crystalline propylene polymer, or (2) a cord, rope or multifilament yarn produced from several filaments of a stretch-oriented material. The filaments are formed from a highly crystalline butene polymer having an average molecular weight of 100,000 to 300,000. The polymer or polymer mixture has a crystallinity of 60 to 90% according to determination by heptane extraction. The polymer or polymer mixture is pigmented and contains an antioxidant or stabilizer. The stretch ratio is 3:1 to 6:1. The molten polymer is extruded at temperatures of 190 to 250°C, cooled to temperatures between 30 and 100°C in a bath, and subjected to orientation by stretching.

Rath, Hermann.
DYEING AND FINISHING OF SYNTHETIC FIBER MATERIALS. [1959] 19p. 2 refs.
Order from SLA mi$2.40, ph$3.30 59-15792

Trans. of D[eu]tsch[e] Textiltechnik (East Germany) 1958, v. 8, no. 4, p. 201-204.

Topics considered in this general review include antistatic preparations, chemical setting of polyamide fibers, anti-pilling treatment and Bolland's invention of profiled fibers, the dyeing of polyacrylonitrile and polyester fibers, and the milling of mixtures of wool and synthetic fibers.

Sevost'yanov, A. G. and Kucherov, B. K.
DETERMINATION OF FORCES ACTING ON FIBRES DURING DRAFTING (Opredeleniye Sil, Deystvuyushchikh na Volokna pri Vytyagivaniy) tr. by M. Slade. 19 Sep 56 [9]p. Trans. no. 2995.
Order from LC or SLA mi$1.80, ph$1.80 59-15151

Trans. of Tekstil'naya Promyshlennost' (USSR) 1954, v. 14, no. 9, p. 16-19.

A pendulum instrument was devised for the direct determination of "drafting force" without disturbing the process itself. Various measurements are described which can be applied to the finding of optimum working conditions of a draw-frame in the drafting of slivers or rovings.

Sumitomo, Hiroshi and Yahama, Yoshikazu.
GRAFT COPOLYMERIZATION OF ARCYLIC COMPOUNDS INITIATED BY RADIATION. [1959] [18]p. (1 fig. omitted) 12 refs.
Order from SLA mi$2.40, ph$3.30 59-15101

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1957, v. 60, no. 7, p. 840-843.

An ethyl polyacrylate-acrylonitrile system was graft-polymerized by irradiation with γ-rays using 13 curies of Co^{60} as a radiation source. The reaction proceeded smoothly at room temperature. The polymerized products were separated by a titration-precipitation method using dimethyl formamide and methanol. Nitrogen distribution and diffusion properties of the initial and final products were determined to compare the change in molecular weight before and after the reaction. From these observations the probability of the formation of a block copolymer through degradation of the main chains by the attack of radiation or chain radicals was predicted. Infra-red spectra and X-ray diffraction diagrams of polyacrylonitrile, graft copolymers and ordinary conjugated polymers of ethyl acrylate-acrylonitrile were studied for comparison. The crystallinity of the graft copolymer was as excellent as that of the other two polymers after heat treatment and stretching.

Paints and Finishes

UNLOADED FORMED ARTICLES OF HIGH STABILITY FROM POLYESTERS. [5 Dec 58] 7p.
Order from RIS $9.50 RIS rept. 61007

Trans. of German patent application F 21 259 (39b, 22/10) DAS 1 029 147, by Farbenfabriken Bayer A. G., Leverkusen, filed 18 Sep 56, pub. 30 Apr 58.

A process is given for producing heat-resistant, unloaded formed articles and coatings from copolymerizable unsaturated polyesters and monomeric vinyl and/or allyl compounds. Use is made of unsaturated polyesters containing alcohol radicals of compounds of the general formula

$$HO - (CH_2)_x - \underset{\displaystyle R'}{\overset{\displaystyle R}{C}} - (CH_2)_x - OH$$

where x is an integer of 1 to 6 and R and R' represent alkyl or cycloalkyl radicals. Unsaturated polyesters containing radicals of other aliphatic glycols are used.

Cornea, J[eanne].
THE PREPARATION OF A VARNISH REPLACING SHELLAC. 24 Mar 59, 3p.
Order from SLA mi$1.80, ph$1.80 59-15667

Trans. of Peintures, Pigments, Vernis (France) 1958, v. 34, no. 11, p. 499-500.

A mixture of phenol-formaldehyde resin and rosin dissolved in 96% alcohol and plasticized with 2 to 3% castor oil with an acid number below 10 was developed as a furniture varnish. The process of finishing using this varnish requires about 45 min/ sq m. Amount of product consumed in application by spray gun is about 200 g/ sq m. The varnish takes a glasslike polish and resists impact, checking and the action of water.

Kuhn, M[artin] Breier, O[tto] and others.
ZINC DUST RUST PREVENTATIVE PAINTS WITH ELECTRICAL CONDUCTIVE BINDERS. [1959] 6p. [figs. and 14 refs. omitted].
Order from SLA mi$1.80, ph$1.80 59-15671

Partial trans. of Farbe und Lack (West Germany) 1957, v. 63 [no. 11] p. 535-[541].

Zinc dust rust preventative paints with a binder mixture made of basic polyamide resins (from phosphonephenylacetic acid-modified alkyd resins and nitrocellulose) in the combination 1:1:1 gave good drying, slight brittling, poor water stability and slight electrical conductivity. With a proportion of 1:1:0.5, slight after-sticking of the paints with a high content of zinc dust, better water stability, good electric conductivity, but again slight brittling; 1:2:1 gave slight after-sticking of paints with a high zinc content, better water stability, good electrical conductivity, again a slight brittling. 1:2:0.5 meant strong after-sticking in all paints, but very good electrical conductance. A drawback of these electrically conductive binders is their poer swelling resistance in the presence of water.

Meyer, Georg J.
THE TESTING OF ENAMELED WIRE. [1959] 6p. (9 figs. omitted).
Order from SLA mi$1.80, ph$1.80 59-15646

Trans. of ETZ [Elektrotechnische Zeitschrift]. [Augsgabe A. Zentralblatt für Elektrotechnik] (Germanv) 1923 [v. 44, no. 35] p. 830-833.

Nedey, George.
PAINTS AND ENAMELS ON COLD-CURING EPOXY RESIN BASIS. [1959] 10p. 7 refs.
Order from SI A mi$1.80, ph$1.80 59-15655

Trans. of Peintures, Pigments, Vernis (France) 1958, v. 34 [no. 6] p. 255-260.

Niesen, Herbert.
EXPERIENCES WITH POLYESTER COATINGS IN THE FURNITURE INDUSTRY. [1959] 12p. (16 figs. and refs. omitted).
Order from SLA mi$2:40, ph$3.30 59-15652

Trans. of Holz als Roh- u[nd] Werkstoff (West Germany) 1956, v. 14, no. 3, p. 105-113.

The preparation of polyester coatings is discussed, and results of their application in the furniture industry are given.

Photographic Materials

CONCERNING THE MECHANISM OF SUPERSENSITIZATION OF PHOTOGRAPHIC EMULSIONS. A CONTRIBUTION TO THE PROBLEM OF ENERGY TRANSFER, I AND II. [1959] 57p. 38 refs. T-3006.
Order from SLA mi$3.60, ph$9.30 59-15695

Trans. of Z[eitschrift für] Elektrochemie (West Germany) 1958, v. 62 [no. 2] p. 132-152.

Conduction of energy is demonstrated by means of fluorescence quenching (Naturwissenschaften 27: 499, 1939; and Kolloid-Z. 92: 300, 1940) and by means of fluorescence depolarization phenomena (Angew. Chem. 49: 563, 1936; Z. physik. Chem. B 49: 324, 1941; and Naturwissenschaften 26: 412, 1938). A further possibility of demonstrating energy conduction is given by the optical sensitization of photographic emulsions, especially by the phenomenon of increasing sensitivity by the addition of given substances i.e., "supersensitization"). No direct relationship exists between the constitution of a compound and its supersensitizing effect. The supersensitizing effect of compounds can be explained by resonance transfer of the energy absorbed by the sensitizing dye to the first excited singlet level of the supersensitizer. In the case of compounds which absorb at shorter wavelengths than the sensitizer, it is assumed that the energy absorbed by the dye is transferred to metastable levels of the supersensitizer, e.g., the lowest triplet. In the supersensitization of carbocyanines, new bands occur which have shifted toward the shorter wavelengths and which are usually regarded as the supersensitized dye bands. When simultaneously applying pseudoisocyanine and mesoethyl-thiocarbocyanine, phenomena were observed which point to the formation of a mixed polymerizate whose composition is perhaps constant.

Gorokhovskiy, Yu. N. and Ozherel'yeva, Ye. I.
OPTICAL SENSITIZATION OF PHOTOGRAPHIC EMULSIONS. IV. SPECTRAL DISTRIBUTION OF SENSITIZATION AFFECTED BY THE CONDITIONS EXISTING WHILE DYE IS ADDED TO THE EMULSION. [1959] 13p. 10 refs. T-3021.
Order from LC or SLA mi$2.40, ph$3.30 59-15809

Trans. of Uspekhi Nauchnoy Fotografii (USSR) 1955, v. 3, p. 110-118.

A spectrosensitometric study was made of the process of sensitization of photographic emulsions with several dyes by bathing and by adding dyes to the emulsions before coating, at different moments of immersion in baths of various compositions and at different concentrations of added dye, and finally at different compositions of the solid phase of the emulsion. The structure of the adsorbed layer of the dye, consisting of different structural elements, is far from being determined only by the relative content of these elements in the initial solution of the sensitizer. In proportion to the duration of the adsorption the adsorption field of the grain gradually changes these aggregate forms of the dye which were progressively adsorbed from the solution. Therefore, by proceeding from entirely different sensitizer solutions and entirely different sensitization conditions, it is possible to obtain adsorbed layers of exactly the same structure.

Natanson, S. V.
ABSORPTION AND SENSITIZATION SPECTRA OF 5, 5'-DIHALOGEN-SUBSTITUTED THIACARBOCYANINES. [1959] 7p. 12 refs. T-3009.
Order from LC or SLA mi$1.80, ph$1.80 59-15178

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 106, no. 3, p. 497-500.

Novikov, I. A. and Gafurova, N. S.
THE INFLUENCE OF GOLD SALTS ON THE PHOTOGRAPHIC PROPERTIES OF SENSITIZED EMULSIONS. [1959] 14p. 24 refs. T-2908.
Order from LC or SLA mi$2.40, ph$3.30 59-15589

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1958, v. 3, no. 3, p. 173-181.

The effect of the concentration of gold salt in photographic emulsions on their speed and the optical density of fog was studied. The observation made by others about the transition of the maximum light-sensitivity through the maximum when the content of gold is increased in the emulsion, was confirmed. It was found that with the change in the concentration of gold the kinetic picture of finishing changes substantially. The rate of finishing depends upon the concentration of aurous thiocyanate in the emulsion. The coefficient of contrast at first drops when the gold content is increased and then it increases. The derived relationships are explained by assuming the inability of even large centers of pure gold to start development without the presence of silver (formed by the influence of light on the AgHal crystal, or during finishing) in their composition.

Tomoda, Y. and Nakamura, N.
LATENT IMAGE FADING IN GAMMAGRAPHY, tr. by Simpei Tutihasi. [1959] 8 refs. T-2848.
Order from SLA mi$1.80, ph$1.80 59-10300

Trans. of [Nihon Shashin Gekkai Kaishi] (Japan) 1958, v. 21, no. 1, p. 16-19.

Experimental investigations were made of latent images by light or by gamma rays on commercial x-ray films or other kind of films fade during their 30-day storage at constant temperature and constant humidity. In particular, relationships between the latent image distribution in silver halide grains and the fading of latent images were studied carefully.

Zharkov, V. N.
THE ROLE OF EDGE DISLOCATIONS IN THE PHOTOGRAPHIC PROCESS. [1959] 2p. 8 refs. T-3003.
Order from LC or SLA mi$1.80, ph$1.80 59-15702

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1958, v. 3, no. 3, p. 225-226.

Plastics

PROCESS FOR PREPARING STABLE AQUEOUS DISPERSIONS OF CURABLE SYNTHETIC RESINS. [28 Nov 58] 6p.
Order from RIS $13.50 RIS rept. 61019

Trans. of German patent application F 16 912 (39b, 22/02) DAS 1 023 882, by Farbwerke Hoechst A. G., Frankfurt, filed 25 Feb 55, pub. 6 Feb 58.

Xylenol-formaldehyde resins added to Stage A (resols) with the phenolaldehyde and/or epoxy and/or furane resins and all other components are cocondensed in the presence of polyvinyl alcohol (PVA). The xylenol resol permits dispersions of these resins, which ordinarily do not disperse in PVA. The proportion of xylenol resol used may vary between 10 to 90%, and polymers such as polyvinyl acetals containing 32 to 90% free hydroxyl groups may also be added to the mixture. Furfural, furfuryl alcohol, or other solvents may be used in the resols. The dispersions may also be prepared by adding the phenolic resols and/or furane resins and/or epoxy resins to an existing xylenol resin dispersion (German Patent 878, 556) containing a corresponding amount of a 5% PVA solution and stirring the mixture with an agitator at 1000 rpm until a stable, homogenous dispersion is obtained. Coatings produced from the dispersions have high compressive strength of at least 400 kg/sq cm, good resistance to acids and alkalies, and low permeability. They can be used to protect large surfaces, such as floors or sewers, from corrosion or mechanical stress.

PROCESS FOR PRODUCING HEAVY METAL-SELECTIVE SYNTHETIC RESINS. [15 May 59] 7p.
Order from RIS $14.50 RIS rept. 61051

Trans. of German patent application V 10 355 (39c, 1) DAS 1 050 539, filed 15 Mar 56, pub. 12 Feb 59, by VEB Farbenfabrik Wolfen.

A process is described for producing heavy metal-selective synthetic resins suitable as ion exchangers or adsorbents. Compounds containing hydroxyl groups, particularly aromatic ones, are condensed with aldehydes or polyfunctional compounds as cross-linking agents with addition of α-unsaturated carboxylic acids or α-unsaturated nitriles.

Bosoni, Achille.
PROCESS FOR MOLDING POLYPROPYLENE. [17 Apr 59] 8p.
Order from RIS $21.00 RIS rept. 96982

Trans. of Belgian patent 561 812, 22 Oct 57, by Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, and Karl Ziegler, Müllheim. Priority: Italian Patent Application 15 560; filed by Montecatini 23 Oct 56.

A process is described for the production of moldings from highly crystalline polypropylene by fusion of polypropylene and its solidification by cooling in a mold. The polypropylene is heated to a temperature not higher than 2.00 f and is solidified by cooling from temperatures between 1.25 and 2.00 f, the letter f designating the optical fusion temperature of the polypropylene expressed in degrees centigrade. This process may, in addition, possess all or some of the following characteristics. The polypropylene has an optical fusion temperature of 164-168°C and is heated to a temperature between 200 and 350°C; The polypropylene is forced into a mold after being heated as specified by the injection-molding technique. The highly crystalline polypropylene is mixed with

amorphous polypropylene; The highly crystalline polypropylene is mixed with a colorant, pigment or filler.

Ivanov, S.
A LOOK IN THE FUTURE (Vzglyad v Budushoheye) tr. by Minor. [1959] 3p. (1 illus. omitted) H 2843 A.
Order from LC or SLA mi$1.80, ph$1.80 59-14321

Trans. from [Sovetskaya Aviatsiya] (USSR) 1958, 8 June.

A brief description for the layman of polyplastics used in heat-insulating and high strength products is presented.

McCollister, D. D. and Sauber, W. J.
PHYSIOLOGICAL EVALUATION OF PLASTIC PRODUCTS IN THE UNITED STATES OF AMERICA tr. by A. M-K. [1959] 10p. 10 refs.
Order from SLA mi$1.80, ph$1.80 59-15530

Trans. of Kunststoffe (West Germany) 1958, v. 48, no. 7, p. 350-352.

Musso, Pompilio and Guzzetta, Giuseppe.
FILM FROM HIGHLY CRYSTALLINE POLYPROPYLENE OR POLYPROPYLENE-POLYBUTENE MIXTURES. [17 Apr 59] 5p.
Order from RIS $14.00 RIS rept. 96977

Trans. of Belgian patent 561 515, 10 Oct 57, by Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan and Karl Ziegler, Mülheim.
Priority: Italian Pat[ent] Appl[ication] 14 865, filed by Montecatini 11 Oct 56.

A process is described for the production of a thermoplastic film material more than 1 mm thick. Predominantly crystalline polymeric material comprising one or more α-olefins containing more than 2 carbon atoms per molecule is extruded, calendered, or molded at elevated temperature, and the resultant film is cooled slowly enough to prevent the development of internal stresses. This process may, in addition, possess all or some of the following characteristics: (a) The elevated temperature lies between 190 and 250°C. (b) The thermoplastic film is cooled too rapidly to avoid the development of internal stresses and is subsequently conditioned at a temperature 5 to 30°C below the second-order transition temperature of the polymer. (c) The film is oriented by stretching.

Pallas, E.
SHEATHING OF SYNTHETIC MATERIALS FOR ELECTRIC CABLES. [1959] 3p. (2 figs. omitted).
Order from SLA mi$1.80, ph$1.80 59-15201

Trans. of Korrosion u[nd] Metallschutz (Germany) 1937, v. 13, p. 95-97.

An acrylic resin sheathing with a unit wt. of 1.74 is described.

Schulz, Rolf C.
STRUCTURE INVESTIGATIONS OF DISACRYL AND OTHER POLYMERIC ACROLEINS. [1959] 31p. 68 refs.
Order from SLA mi$3.00, ph$6.30 59-15697

Trans. of Kunststoffe (West Germany) 1957, v. 47, no. 6, p. 303-312.

De-stabilized acrolein transforms itself spontaneously into a white, infusible substance which is called "disacryl." By means of various polymerization catalysts, acrolein may also be converted into solid products which differ considerably from each other in their physical and chemical properties. Redox polymerization yields polymers similar to disacryl. By various reactions, which are typical for aldehydes, soluble derivatives may be obtained from disacryl and redox polymerizates. By means of fractionations and molecular weight determinations, it was possible to prove that these are macromolecular substances. Based on the reactions, a structural formula for polyacroleins is discussed and compared with the formulas proposed so far.

Yamazaki, Isamu.
THE EFFECT OF DIVINYL-ACETYLENE ON THE REDOX POLYMERIZATION. Rept. no. 4 on Studies on Acrylonitrile Polymerization. [1959] 13p. 4 refs.
Order from SLA mi$2.40, ph$3.30 59-15268

Trans. of Kobunshi Kagaku (Japan) 1957, v. 14 [no. 142] p. 86-91.

A study was made of the effect of additions of divinylacetylene in the polymerization reaction of acrylonitrile by means of various redox formulas. Divinylacetylene showed a typical inhibition-agent action in the different reaction systems and, extending the inhibition period, it changed the acrylonitrile monomer consumption velocity and the average degree of polymerization of the polymer. The strengths of the redox systems were compared by determining the inhibition periods.

Rubber and Elastomers

*KAUCHUK I REZINA (USSR) 1959 [V. 18] NO. 1, P. 1-64 (Raw and Vulcanized Rubber). [1959] [22]p.
SOV-138-59--1-(1-19)/19.
Order from OTS $0.60, $3.50/6 mo. PB 141 057T-12
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

POLYURETHAN ELASTOMERS OF SUPERIOR TEAR STRENGTH. [10 Apr 59] 10p.
Order from RIS $19.50 RIS rept. 61038

Trans. of German patent application F 20 468 (39b, 22/04), DAS 1 022 788, filed 7 June 56, pub. 16 Jan 58, by Farbenfabriken Bayer A. G., Leverkusen.

A process is described for producing high-molecular weight, cross-linked plastics from linear or predominantly linear condensates and/or polymers containing hydroxyl groups, with molecular weights above 1000. organic diisocyanates, and possibly compounds containing at least two hydrogen atoms reactible with isocyanates and possessing a molecular weight of less than 500. Use is made of aromatic diisocyanates containing an azo group in the molecule.

PREFORMED POLYURETHAN ELASTOMERS OF INCREASED STORAGE LIFE. [10 Apr 59] 12p.
Order from RIS $22.50 RIS rept. 61036

Trans. of German patent application F 20 480 (39b, 22/04), DAS 1 028 772, filed 8 June 56, pub. 24 Apr 58, by Farbenfabriken Bayer A. G., Leverkusen.

A process is described for producing and simultaneously forming high-molecular weight cross-linked plastics from linear or predominantly linear condensates and/or polymers bearing end groups with active hydrogen atoms and having a molecular weight of more than 1000, aromatic diisocyanates, glycols, hydroxyamines and diamines. The linear reaction products prepared in conventional fashion from polymers and/or polycondensates extended with diisocyanates that are free of urea and urethan groups, and glycols, diamines or hydroxyamines, which reaction products retain free hydroxyl and/or amino groups, are reacted at elevated temperature with an excess (relative to OH or NH_2 groups in the reaction product) of a mixture of N-substituted urea derivatives bearing terminal isocyanate groups, of the formula

$$O=C=N-\left(R-NH-\underset{\underset{O}{\|}}{C}-NH\right)_x-R-N=C=O$$

and diisocyanates containing urethan groups, of the formula

$$O=C=N-\left(R-NH-\underset{\underset{O}{\|}}{C}-O-Y-O-\underset{\underset{O}{\|}}{C}-NH\right)_x-R-N=C=O$$

where R represents a possibly substituted aromatic radical, x = 1 to 5, and Y represents a straight-chain or branched aliphatic or aliphatic-aromatic radical which may contain hetero atoms, ester groups, urea groups, and other urethan groups, and where aliphatic radicals provide the link to the oxygen atoms.

Anikanova, K. F. [Betts, G. E.] and others.
THE SOVIET POLYISOPRENE RUBBER SKI, APPROXIMATE IN STRUCTURE AND PROPERTIES TO NATURAL RUBBER. [1959] [24]p. 15 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-15624

Trans. of Kauchuk i Rezina (USSR) 1957, v. 16, no. 1 p. 4-14.

The results of basic tests of SKI rubber conducted at the Research Institute of the tire industry are presented in tabular form. According to indices of plasticity and reducibility, SKI is closer to masticated natural rubber and is characterized by a lower reducibility than other synthetic rubbers. The essential feature of SKI is a slow development of temperatures during mechanical treatment in thermal mastication and when mixing it with carbon black. Slow increase in temperature is due to a low internal friction. With increase of test temperature, the specific elongation of SKI vulcanizates is lowered to a less extent than in vulcanizates of other synthetic rubbers. The adhesiveness of crude mixtures of SKI is small.

Chesnokov, N.
THE EFFECTS OF SODIUM AND NAPHTHENIC ACIDS ON THE VULCANIZATION OF SYNTHETIC RUBBER. [1959] [9]p.
Order from LC or SLA mi$1.80, ph$1.80 59-15692

Trans. of [Kauchuk i Rezina] (USSR) 1933, v. 9, p. 34-37.

Vulcanization proceeds most rapidly with washed synthetic rubber containing a minimum sodium (ash) content (up to 0.5%). Unwashed rubber, containing a relatively larger amount of sodium, materially retards the vulcanization (i.e., in the 37th cut sheet optimum vulcanization is at 59 minutes, in the 3rd batch at 80 minutes). The increase in the vulcanization time at identical sulfur dosages is the more pronounced, the more sodium is contained in the rubber. Naphthenic acids, added to neutralize the sodium in unwashed rubber, retard even more the vulcanization process. When naphthenic acids are added to washed rubber, the vulcanization time is retarded in proportion to the amount of acid added.

Iwakura, Yoshio and Taneda, Yasuo.
PREPARATION AND PROPERTIES OF ELASTIC LINEAR POLYURETHANES. Rept. no. 1 on Block Copolymerization Based on Polyaddition Reactions. [1959] 12p. 14 refs.
Order from SLA mi$2.40, ph$3.30 59-15240

Trans. of Kobunshi Kagaku (Japan) 1958, v. 15, no. 162, p. 654-659.

The polyurethanes having terephthaloyl groups have been prepared by the polyaddition reaction with bis (hydroxy-polyethylene) terephthalates and diisocyanates. These linear polyurethanes have rubberlike elastic properties by the effects of terephthaloyl groups and urethane linkages which are arranged regularly in the polymer chains. For an example, 1 mole of bis-(hydroxy-tetraoxyethylene) terephthalate and 1.15 mole of 2,4-toluylene diisocyanate are heated together at 100°C. for 6 hours to give polyurethane with an intrinsic viscosity in m-cresol at 25°C. of 0.24. The product melts at 170~177°C. and a molded sheet of this polyurethane has a tensile strength of 96.7 kg/cm^2 and elongation of 330%.

Ostromislenskiy, I.
ON THE POLYMERIZATION OF ISOPRENE, DIVINYL AND DIMETHYLERYTHRENE INTO RUBBER OR INTO ITS HOMOLOGUES. [1958] 33p. 94 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-10759

Trans. of [Zhurnal Obshchey Khimii] (USSR) 1916, v. 48, p. 1071-1114.

(See also 59-10675)

Ostromislenskiy, I. I. and Kelbasinskaya, I. M.
ON TWO NEW RUBBER CONSTANTS: "ELASTICITY POINT" AND "DEAD TEMPERATURE". [1958] 30p. 20 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-10675

Trans. of [Zhurnal Obshchey Khimii] (USSR) 1915, v. 47, p. 1401-1441.

Ostromislenskiy, I. I.
ON VULCANIZATION OF SYNTHETIC RUBBERS. [1958] 11p. 12 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-10676

Trans. of [Zhurnal Obshchey Khimii] (USSR) 1915, v. 47, p. 1441-1453.

Seleznev, I. I.
PROBLEM OF TESTING AUTOMOBILE TIRES. [1959] [10]p.
Order from LC or SLA mi$1.80, ph$1.80 59-15619

Trans. of Kauchuk i Rezina (USSR) 1958, v. 17, no. 8, p. 32-35.

Papers presented at an international conference by representatives of the tire industry of the German Democratic Republic and of Czechoslovakia are summarized. G. Heinz reported on the measurement of stresses in the rim of automobile tires. G. V. Weinhold discussed machine tests of automobile tires. M. Fisher reported on investigations of the collision strength of automobile tires.

Yermolenko, I. N., Mazel, M. I. and Yermolenko, N. F.
THE SIGNIFICANCE OF THE POLAR COMPONENT OF MIXED AGENTS TO THE SWELLING OF VULCANIZERS. [1959] 8p. (4 figs. omitted) 26 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15922

Trans. of Akad[emiya] [Nauk] SSSR. Doklady, 1953, v. 89, no. 3, p. 505-508.

The mechanism of the reaction between the polar component of the mixed agent and the rubber molecules during swelling is studied, considering rubber as a polymer whose molecular chains are connected by assorted bonds not identical as to energy. Two groups of agents were used, binary systems consisting of nonpolar and weakly polar substances and of nonpolar and highly polar substances. The data obtained shows that the bonds between the chains are governed by Van der Waals forces and also hydrogen bonds. The activity in the caoutchouc phase is dependant upon the concentration of the polar component of the binary system. The course of the curves for swelling is determined by the complex reactions of the agent components both between themselves, and with the polymer.

Wood and Paper

WHERE IS THE FAULT? DIFFICULTIES WITH TISSUE PAPER MANUFACTURE, PIN-HOLES, CLOSE LOOK-THROUGH, PICK, SCREEN TYPES, BEATING HINTS, ETC. Mar 59, 3p.
Order from SLA mi$1.80, ph$1.80 59-15062

Trans. of Wochenblatt [für] Papierfabr[ikation] (West Germany) 1957, v. 85, no. 22, p. 849-850.

Barbarovich, Yu. K.
A METHOD OF CALCULATING THE TRACTIVE FORCES OF THE DRIVING ROLLS FOR A FOURDRINIER WIRE (WITH TWO DRIVING ROLLS). [1959] 7p. (3 figs. omitted) 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15834

Trans. of Bumazh[naya] Prom[yshlennost'] (USSR) 1958, v. 33, no. 4, p. 13-15.

A mathematical procedure is given for calculating the tension in the various parts of the wire, the tractive force required, and the distribution of the tractive forces between the two driving rolls, for calculation of the power of the electric drive. In this procedure the vacuum in the couch roll is taken into account. A method of solving the problem is given.

Brecht, W[alter].
THE BEHAVIOUR OF PAPERS WHEN THEIR MOISTURE CONTENT CHANGES. PT. 1. [1959] 9p. (14 figs. omitted) 30 refs.
Order from SLA mi$1.80, ph$1.80 59-15918

Trans. of [das] Papier (West Germany) 1959, v. 13, no. 7/8, p. 130-137.

Chayka, V. V. and Filimonova, E. K.
VACUUM DRYING OF SLICED VENEER (Vakuumnaya Sushilka dlya Strogannoy Fanery). [1959] 2p. Trans. no. 4067.
Order from LC or SLA mi$1.80, ph$1.80 59-15400

Trans. of [Derevoobrabatyvayushchaya Promyshlennost'] (USSR) 1957, v. 6, no. 9, p. 21.

A drying cabinet with a production capacity of 400 sq m/super ft of veneer is described. The device, which can be operated by 1 man, dries knife-cut veneer with a 20 to 25% moisture content to a required 6% within 10 min.

Ehrnrooth, E.
CLARIFICATION OF WHITE LIQUOR WITH HYDRO CYCLONES. [1959] 10p. 7 refs.
Order from SLA mi$1.80, ph$1.80 59-15164

Trans. of Svensk Pappers-tidning (Sweden) 1958, v. 61 [no. 4] p. 91-95.

Hydrocyclones may be used to reduce the impurities in the white liquor of Dorr thickeners some 30 to 50%. The result is more dependent upon the size of the particles than upon their specific gravity. It is not possible to separate the iron and carbon.

Fineman, O[lle].
MOVEMENT OF CHIPS IN THE KAMYR CONTINUOUS DIGESTER. Apr 59, 5p. (1 fig. omitted).
Order from SLA mi$1.80, ph$1.80 59-15374

Trans. of Svensk Pappers-tidning (Sweden) 1957 [v. 60] no. 11, p. 425-428.
Another translation is available from SLA mi$1.80, ph$1.80 as 59-15698, 9 Apr 59, 6p

Paths and speeds of chips through the digester were determined by observation of radioactive tracer chips.

Golovko, E. M. and Tsirel'son, G. I.
A NEW DESIGN FOR A PAPER MOISTENER. May 59, 2p. (4 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-15812

Trans. of Bumazh[naya] Prom[yshlennost'] 1959, v. 34, no. 1, p. 21-22.

A moistening apparatus is discussed which uses compressed air to produce atomised jets of water. The new design may be used on the paper making machine and on special moistening equipment.

Jayme, G[eorg] Knolle, H[erbert] and Rapp, G[erda].
DEVELOPMENT AND FINAL VERSION OF THE LIGNIN DETERMINATION METHOD ACCORDING TO JAYME-KNOLLE (Entwicklung und endgültige Fassung der Ligninbestimmungs-methode nach Jayme-Knolle). [1959] 8p. 10 refs. Trans. no. 4260.
Order from SLA mi$1.80, ph$1.80 59-15362

Trans. of das Papier (West Germany) 1958, v. 12, no. 17/18, p. 464-467.

A method for lignin determination was developed which gives lignin values of pulps in an appreciably shorter time than hitherto possible. For hydrolysis a mixture of phosphoric acid and sulphuric acid is used at a temperature of 35°C, which is completely stable and hence can be prepared in larger amounts. The lignin values obtained thereby correspond to the Halse values. Precipitations with trypaflavine do not furnish and measure for the soluble lignin sulphonic acids, because uronic acids and polyuronides are precipitated as well. Washing out of the sulphite lignin must be carried out by adding buffer solutions and small amounts of electrolytes. Milling of the raw material is favourably done in a laboratory Wiley mill. The lignin values obtained according to the new method are well reproducible and widely independent of the mesh of the screen which is used for the defibration.

Liese, J. and Stamer, J.
COMPARATIVE EXPERIMENTS ON THE INTENSITY OF DESTRUCTION OF SOME IMPORTANT WOOD-DESTROYING FUNGI AND THE RESULTING DECREASE IN STRENGTH OF WOOD. [1959] 13p. 3 refs.
Order from SLA mi$2.40, ph$3.30 59-10970

Trans. of Angewandte Botanik (Germany) 1934, v. 16 [no. 4] p. 363-372.

Liese, Walter and Ammer, Ulrich.
INVESTIGATION OF WOOD FIBRE LENGTH IN POPLAR (Untersuchungen über die Länge der Holzfaser bei der Pappel) tr. by W. Knie and E. Bolza. [1959] [15]p. 26 refs. Trans. no. 4205.
Order from SLA mi$2.40, ph$3.30 59-15287

Trans. of Holzforschung (Germany) 1958, v. 11, no. 5/6, p. 169-174.

Macerated tangential sections from two black poplars (Populus robusta) 5 and 34 years old respectively, were examined with an ocular micrometer to determine fiber length. The length of fibers within an annual ring was found to increase progressively from spring to summer wood, with an average difference of 15 to 20%. Fiber length increases with the age of the annual rings. In annual rings equally spaced from the pith, the fiber length increases with height in the tree. The fibers of the poplar trees examined were from 2 to 7% shorter on the south side of the trunk: this variation is explained by the increased cambium growth caused by the greater warmth. Some increase of fiber length in the vicinity of branch insertions was observed.

Nederveen, G. van.
THE STUDY OF THE EFFECT OF BEATING ON PULP (Über die beuteilung des Mahlzustandes von Zellstoffen). [1959] [18]p. 15 refs. Trans. no. 4144.
Order from SLA mi$2.40, ph$3.30 59-15320

Trans. of das Papier (West Germany) 1958, v. 12, no. 11/12, p. 267-273.

Devices and procedures for analysis of the effect of beating paper fibers are evaluated. The phase contrast microscope is strongly recommended. The Imset Faserseparator or Ivanov's apparatus which give indications of fiber shortening and swelling in one run can be used to complete information derived from the Schopper-Riegler tester for determination of the beating degree. Fiber shortening can be studied with the Clark classifier. The Jayme method is satisfactory for measurement of swelling. The permeability method of Robertson and Mason for measuring the specific surface of fibers is better and more accurate than the silvering method of J. D'A. Clark.

Ogarkova, T. V.
EFFECT OF THE DEGREE OF COMPRESSION ON THE COEFFICIENT OF LINEAR EXPANSION OF

BIRCH WOOD (Vliyaniye Stepeni Pressovaniya na Koeffitsiyent Lineynogo Rasshireniya Drevesiny Berezy). [1959] 4p. 2 refs. Trans. no. 4066.
Order from LC or SLA mi$1.80, ph$1.80 59-15401

Trans. of [Derevoobrabatyvayushchaya Promyshlennost'] (USSR) 1957, v. 6, no. 9, p. 17-18.

Experiments with birch wood compressed by the method of P. N. Khukhryanskii (Pressovanie i gnut'e drevesiny [Pressing and Bending of Timber], Moscow-Leningrad, Goslesbumizdat, 1956) in a radial direction with respect to the annual rings, indicated that the coefficient of linear expansion of natural wood is in a linear relationship to the percentage of late wood. The coefficient of linear expansion of compressed wood depends on the coefficient of linear expansion of the wood compressed and is linearly dependent on the degree of compression.

Rebek, M[arius] and Beck, H[einrich].
THE CHARACTERIZATION OF THE BEHAVIOUR OF CELLULOSE BY MEANS OF CRYSTAL VIOLET BASE. 7 Feb 59, 6p. (1 table omitted) 4 refs.
Order from SLA mi$1.80, ph$1.80 59-10986

Trans. of Das Papier (West Germany) 1959, v. 13, no. 1/2, p. 1-5.

Shustov, A. D.
THE DYNAMICS OF THE STRETCHING OF PAPER ON THE MACHINE. [1959] 6p. (1 fig. omitted)
Order from LC or SLA mi$1.80, ph$1.80 59-15835

Trans. of Bumazh[naya] Prom[shlennost'] (USSR) 1958, v. 33, no. 11. p. 7-9.

The relationship between the elongation of the paper and the difference between the speeds of adjacent sections of the papermaking machine when the speeds are irregular was theoretically established. For solution of the problem of what temporary variation in speed of the sections from the set value is safe, i. e., of the dynamic accuracy and rapidity of action of the regulator required, it was necessary to establish the relationship between the variation in speed of the section from the set value and the magnitude of the permissible elongation of the paper.

Stamer, Johs.
BALL INDENTATION HARDNESS TESTING OF WOOD. [1959] 4p. (4 figs. omitted) 7 refs.
Order from SLA mi$1.80, ph$1.80 59-15634

Trans. of Mitt[eilungen] der Deutsch[en] Materialprüfungstalten. [Sonderheft] (Germany) 1930, no. 14, p. 38-40.

On the basis of several ball indentation tests carried out on various types of wood and of the calculation of the hardness number for various depths of penetration, the definition of wood hardness as the quotient of the load and the projection of the hemisphere pressed into the wood, for certain types of wood (apparently all coniferous woods), seems to be arbitrary since, for these, the hardness number decreases appreciably from the beginning as the depth of penetration increases, while it remains constant when other woods are used (probably hard wood). Under these circumstances the ball pressure method cannot be considered as a final solution to the problem of testing the hardness of wood.

Treiber, E[rich E.].
THE CHARACTERIZATION OF VISCOSE SOLUTIONS. [1959] [9]p. 57 refs.
Order from SLA mi$1.80, ph$1.80 59-15050

Partial trans. (p. 798-802) of Svensk Pappers-tidning (Sweden) 1958 [v. 61, no. 18] p. [794]-802.

Discussions are presented on (1) equipment for examining gel particles, and (2) the recording of gel particles according to Boryniec, Kiessig, Koblitz and Grotijahn.

MATHEMATICS

AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA MATEMATICHESKAYA, 1958, V. 22, NO. 5, P. 577-735 (News of the Academy of Sciences of the USSR. Mathematics Series). [1959] [11]p. SOV-38-22-5-(1-10)/10.
Order from OTS $0.50, $3.00/6 mo. PB 141 031T-6
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY. MATEMATIKA (USSR) 1958 (News of Institutes of Higher Learning, Mathematics).
Order from OTS $0.70, $4.00/year
Foreign $0.95, $5.50/year

No. 2, p. 3-237, PB 141 032T-4
No. 5, p. 3-174, PB 141 032T-5
No. 6, p. 3-276, PB 141 032T-6

Consists of abstracts in English.

MATEMATICHESKIY SBORNIK (USSR) 1958, V. 46, NO. 3, P. 261-372 (Mathematics Symposium). [1959] [6]p. SOV-39-46-3-(1-5)/ 5.
Order from OTS $0.50, $3.00/6 mo. PB 141 033T-13
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

*PRIKLADNAYA MATEMATIKA I MEKHANIKA (USSR) 1958, V. 22, NO. 3, P. 289-423 (Applied Mathematics and Mechanics). [1959] 1v. SOV-40-22-3-(1-21)/21.
Order from OTS $0.60, $3.50/year PB 141 034T-6
Foreign $0.85, $5.00/year

Consists of abstracts in English.

UKRAINSKIY MATEMATICHESKIY ZHURNAL (USSR) 1958, V. 10, NO. 3, P. 239-347 (Ukrainian Mathematics Journal). [1959] [16]p. SOV-41-10-3-(1-14)/14.
Order from OTS $0.50, $2.00/year PB 141 035T-3
Foreign $0.75, $3.00/year

Consists of abstracts in English.

USPEKHI MATEMATICHESKIKH NAUK (USSR) 1958, V. 13 (Progress of Mathematical Sciences).
Order from OTS $0.60, $3.50/year
Foreign $0.85, $5.00/year

No. 3, p. 3-254, PB 141 036T-5
No. 6, p. 3-245, PB 141 036T-6

Consists of abstracts in English.

Smirnov, Yu. M.
ON METRIZATION OF TOPOLOGICAL SPACES. [1959] [16]p. 11 refs. Trans. no. 91.
Order from LC or SLA mi$2.40, ph$3.30 59-15132

Trans. of Uspekhi Matematicheskikh Nauk (USSR) 1951, v. 6, no. 6(46) p. 100-111.

A topological space R is metrizable if and only if it is regular and has a basis γ which is the union of a finite or countably infinite number of locally finite systems γ_n. The necessity of this condition follows from the paracompactness of an arbitrary metric space. The sufficiency is shown by the facts that: (1) under the hypothesis, every open set G in R is of type F_σ, (2) R is normal, (3) R is homeomorphic to a certain sub space of the generalized Hilbert space. Conditions are given for the metrizability of locally metrizable spaces; in particular, a locally metrizable Hausdorff space is metrizable if and only if it is paracompact. A proof is also given for the theorem of Stone, which was used in proving the general conditions, and for the theorem of Dieudonne, that every paracompact Hausdorff space is normal.

Vasil'eva, A. B.
ON REITERATED DIFFERENTIATION WITH RESPECT TO PARAMETER OF THE SOLUTIONS OF A SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS WITH A SMALL PARAMETER IN THE DERIVATIVE, tr. by R. P. Illwitzer. 21 Sep 58, 8p. 5 refs. TG 230-T24.
Order from OTS $0.50 59-11253

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 119, no. 1, p. 9ff.

An investigation is made of the n^{th}-order derivatives, with respect to the parameter μ, of the solution of the system of differential equations

$$\mu(dz/dt) = F(z, x, t),$$

$$dx/dt = f(z, x, t)$$

$$z|_{t=0} = z^0, \quad x|_{t=0} = x^0$$

examined by A. N. Tikhonov (Mat. Sbornik 22: 64, 1948 and 31: 73, 1952) and A. B. Vasil'eva (Mat. Sbornik 28: 70, 1951; 31: 73, 1952; and Vestnik MGU No. 3, 1954). Continuous partial derivatives are assumed for all arguments of $F(z, x, t)$ up to $n+1$, inclusively, and of $f(z, x, t)$ up to n, inclusively. A theorem is formulated which states that the limiting values z_{μ^n}, x_{μ^n} of the n^{th}-order derivatives with respect to μ of the solution $z(t, \mu)$, $x(t, \mu)$ of the system exist in the interval $0 < t \leq T$, where T does not depend on μ, and that they satisy the degenerate system of equations

$$n(d/dt)z_{\mu^{n-1}} = F^{(n)}(z, x, t, z_\mu, \ldots, z_{\mu^n}, x_\mu, \ldots x_{\mu^n}),$$

$$(d/dt)x_{\mu^n} = f^{(n)}(z, x, t, z_\mu, \ldots z_{\mu^n}, x_\mu, \ldots x_{\mu^n}),$$

under the initial condition

$$x_{\mu^n}|_{t=0} = x^0_{\mu^n} = \int_0^\infty (-1)^n \tau^n f^{(n)}_{n-1}(\tau) d\tau,$$

where $\tau = t/u$. The theorem fully defines the limiting behavior of derivatives of any order of the solution of the system with respect to μ.

Computing Devices

Der-Shvarts, G. V. and Netrebenko, K. A.
CALCULATION OF PLANE PARALLEL AND AXIAL SYMMETRICAL ELECTROSTATIC FIELDS, tr. by A. L. Monks. 3 Feb 59, 18p. 9 refs. (foreign text included).
Order from LC or SLA mi$2.40, ph$3.30
AEC-tr-3561

Trans. of *Elektrichestvo (USSR) 1958, no. 5, p. 51-54.

A specialized computer was devised for the numerical solution of the Laplace equation $\Delta\varphi = 0$ for determination of the potential of the electrostatic field. This computer has the simplicity of operation of a lattice integrator and the accuracy of the discreet computing machine. Its calculation expenditure is considerably lower than that of high-speed universal machines.

[Mallock, R. R. M.].
MALLOCK ELECTRICAL CALCULATING MACHINES FOR SOLVING SYSTEMS OF LINEAR EQUATIONS. [1959] 3p. (2 figs. omitted)
Order from SLA mi$1.80, ph$1.80 59-15350

Trans. of Schweizerische Bauzeitung (Switzerland) 1935, v. 106, no. 15, p. 175-176.

MECHANICS

REFERATIVNYY ZHURNAL. MEKHANIKA (USSR) 1958, NO. 1, P. 3-179 (Journal of Abstracts, Mechanics). [1959] 1v. SOV-124-58-1-(18-1466).
Order from OTS $1.50, $8.00/6 mo. PB 141 124T-12
Foreign $1.75, $9.50/6 mo.

Complete translations of those entries which were originally published in the USSR, excluding those abstracted elsewhere.

Aerodynamics and Pneumatics

Ferrari, Carlo.
WALL TURBULENCE, tr. by R. H. Cramer. Mar 59, 133p. 22 refs.
Order from NASA NASA RE 2-8-59W

Trans. of mono. Corso sulla Teoria della Turbolenza, Section C, Rome, 1957.

A theoretical study has been made of the factors affecting the development of a turbulent flow in the presence of a solid wall, "wall turbulence," with a view to obtaining a better understanding of the problem. The basic set of governing relationships as set forth are not sufficient in themselves to provide the much sought after solution to the turbulent flow problems, but when used with certain simplifying assumptions they do permit a careful study of some simple cases of wall turbulence, such as a flat plate with or without a uniform pressure gradient or flow in a uniform channel. Also included is a brief discussion of the works of other authors which may lead to a sound rational basis for future work on wall turbulence.

Gersten, Klaus.
NONLINEAR AIRFOIL THEORY FOR RECTANGULAR WINGS IN INCOMPRESSIBLE FLOW (Nichtlineare Tragflächentheorie für Rechteckflügel bei Inkompressibler Strömung) tr. by S. Reiss. Feb 59, 14p. 11 refs.
Order from NASA NASA RE 3-2-59W

Trans. of Z[eitschrift] f[ür] Flugwissenschaften (West Germany) 1957, v. 5, no. 9, p. 276-280.

Applying a simple extension of the conventional concept of the vortex system of the linear airfoil theory, the nonlinear dependance of the aerodynamic coeficients on the angle of attack can be given. The theory renders the nonlinear contributions a function of the aspect ratio; these contributions, particularly, in cases of airfoils of small aspect ratio, being no longer negligible. The computation is carried out by means of a system of equations, developed with slight modifications, from the corresponding system in the linear theory. The theory is based on the linear airfoil theory of N. Scholz.

Mazin, I. P.
CALCULATION OF THE DEPOSITION OF DROPS ON CIRCULAR CYLINDRICAL SURFACES. [1959] 12p. 5 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15560

Trans. of Tsentral'naya Aerologicheskaya Observatoriya. Trudy (USSR) 1952, no. 7, p. 39-49.

A number of simple and permissable physical presuppositions are used which make possible the determination of the deposition of water drops onto a cylindrical surface in an air flow containing the drops. The solution satisfies the boundary conditions at infinity as they are modified by the assumptions.

Hydrodynamics, Hydraulics, and Hydrostatics

Fedosov, A. I.
EFFECT OF SURFACE-ACTIVE AGENTS ON THE MOVEMENT OF DROPS IN FLUIDS. [1959] [11]p. 13 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15230

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1956, v. 30 [no. 1] p. 223-227.

The movement of drops in fluids is known to differ substantially from that of small solid spheres. In developing a theory of the retardation of drops by a surface-active agent it would be well to take in account the dependance of the flow of the agent on the polar angle of the drop. The problem of the diffusion of the dissolved agents toward a moving drop is solved with an expression for the distribution of concentration on the surface of the drop and a ratio is derived showing the dependance of the retardation upon the relative densities of the drop and the agent.

Pshenay-Severin, S. V.
EFFECT OF HYDRODYNAMIC INTERACTION BETWEEN SMALL CLOUD DROPS UPON THEIR FALLING SPEED. 8 Jan 59, 11p. 19 refs. JPRS L-1355-D.
Order from OTS $0.50 59-11413

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1957, no. 8, p. 1045-1051.

In the Oseen's flow system of falling drops (having a radius R>20μ), a hydrodynamic interaction may cause a rapprochement of the similar drops and may considerably increase the rapprochement velocity of drops of comparable sizes.

Shal'nev, K. K.
HYDROMECHANICAL ASPECTS OF CAVITATIONAL EROSION (Gidromekhanicheskiye Asnekty Kavitatsionnoy Erozii). 17 Nov 58, 32p. 24 refs. (foreign text included).
Order from LC or SLA mi$3.00, ph$6.30 AEC-tr-3467

Trans. of Akad[emiya] Nauk SSSR. Otdel[eniye] Tekh[nicheskikh Nauk]. Izv[estiya] 1958, no. 1, p. 52-62.

Results are given of experimental investigations on the effect of the dimensions of a cavitation region, the developmental stages of the cavitation, the rate of the current and the Reynolds number N_{Re} on the intensity of erosion.

METALLURGY

*FIZIKA METALLOV I METALLOVEDENIYE (USSR) 1958, V. 6, NO. 4, P. 577-768 (Physics of Metals and Metallography). [1959] 1v. SOV-126-6-4-(1-34)/34.
Order from OTS $0.80, $4.75/year PB 141 126T-5
Foreign $1.05, $6.25/year

Consists of abstracts in English.

*METALLOVEDENIYE I TERMICHESKAYA OBRABOTKA METALLOV (USSR) 1959, NO. 1, P. 2-64 (Metallography and Heat Treatment of Metals). [1959] 1v. SOV-129-59-1-(1-17)/17.
Order from OTS $0.60, $3.50/6 mo. PB 141 131T-9
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

METALLURGIST, 1958, NO. 5, 8-10, P. 213-271, 391-553, 1959, 4 NOS.
Order from CB $12.50 each, $95.00/year

Trans. of Metallurg (USSR)
1958, no. 5, p. 1-[40].
1958, no. 8, p. 1-[38].
1958, no. 9, p. 1-[40].
1958, no. 10, p. 1-[41].

NAUCHNYYE DOKLADY VYSSHEY SHKOLY. METALLURGIYA (USSR) 1958, NO. 4, P. 5-264 (Scientific Reports of Higher Schools, Metallurgy). [1959] 1v. SOV-163-58-4-(1-47)/47.
Order from OTS $0.90, $3.50/year PB 141 133T-3
Foreign $1.15, $4.50/year

Consists of abstracts in English.

RESEARCH ACTIVITY IN THE FIELD OF METALLURGICAL SINTERING PROCESSES IN THE INSTITUTE FOR MATERIALS PROCESSING AT THE DRESDEN INSTITUTE OF TECHNOLOGY. [1959] 4p. (4 diagr. omitted)
Order from SLA mi$1.80, ph$1.80 AEC-tr-2373

Trans. of unidentified mono.

SOVIET METAL TECHNOLOGY, 1959, VOL. 2, NO. 1. A quarterly review of Soviet technical papers. 15 Mar 59, 105p.
Order from PS $20.00, $60.00/year

*ZAVODSKAYA LABORATORIYA (USSR) 1958, V. 24 (Plant Laboratory).
Order from OTS $1.00, $5.50/6 mo.
Foreign $1.25, $7.00/6 mo.

No. 9, p. 1043-1168, PB 141 027T-13
No. 12, p. 1427-1531, PB 141 027T-14

Consists of abstracts in English.

Fischer, Werner
PROCESS FOR SEPARATION OF ZIRCONIUM FROM HAFNIUM. [24 Oct 58] 16p.
Order from RIS $23.00 RIS rept. 96919

Trans. of German patent application F 18 678 (12m, 9) DAS 1 010 061, filed 18 Oct 55, pub. 13 June 57.

A process is described for separating zirconium and hafnium compounds from one another by partition of their thiocyanates between water and organic solvents. The partition is effected in the absence of sulfate ions and in the presence of at most small amounts of chloride ions. As great an amount of chloride ions is present as is soluble in saturated ammonium thiocyanate solution. Solid, anhydrous $(Zr, Hf)Cl_4$ or a solid $(Zr, Hf)OCl_2 \cdot 8H_2O$ prepared under conditions avoiding hydrolysis is dissolved in a concentrated aqueous solution of a readily soluble thiocyanate, and is subjected to a partition between this solution and the organic solvent. So much (Zr, Hf) chloride is dissolved in saturated aqueous ammonium thiocyanate solution that solid ammonium chloride precipitates. The chlorides are dissolved under conditions preventing their hydrolysis. The partition is effected in the absence of anions other than SCN^-. To separate foreign anions the aqueous solution of a readily soluble thiocyanate, which is practically non-extractible itself, and of a (Zr, Hf) salt with an anion, no appreciable portion of which goes into the extract, is extracted with the solvent used for the process. After the partition, the zirconium and the possibly remaining hafnium are precipitated from the aqueous phase by means of ammonia, and the filtrate is acidified and reused for the partition, after being replenished, if necessary, with the added, readily soluble thiocyanate.

Gürtler, Gustav.
CONTRIBUTION TO THE CRYSTALLIZATION OF ALUMINUM-SILICON ALLOYS. [1959] 20p. (23 figs. omitted) 31 refs.
Order from SLA mi$2.40, ph$3.30 59-15096

Trans. of [Zeitschrift für Metallkunde] (Germany) 1953, v. 44, p. 503-509.

The so-called "granular" and "lamellar" form of crystallization of silicon is described and the presence of phosphide nuclei is determined as the cause for the various types of crystallization. The amount of phosphorus effecting a transformation of the lamellar type into the granular type is extremely low. The limit is found in the order of magnitude of 0.00015%. Aluminum phosphides formed in the presence of phosphorus have a nucleus-forming effect on silicon and change furthermore the crystallization type of silicon. A transformation of anomalous aluminum-silicon eutectic into a normal eutectic, the change in structure

which is denoted by "refinement", takes place also without addition of sodium in phosphorus-free alloys during a sufficient cooling rate as a consequence of supercooling, while an addition of sodium to the phosphorus-containing type is always necessary for the transformation into a normal eutectic. An addition of sodium neutralizes the nucleus-forming effect of phosphides.

Klyachko, Yu. A., Shapiro, M. M. and others.
RESEARCH ON THE THEORY OF THE ELECTROCHEMICAL PHASE ANALYSIS OF ALLOYS (Issledovaniya po Teorii Elektrokhimicheskogo Fazovogo Analiza Splavov) [1959] [9]p. 4 refs.
(p. 11-19 of Soviet Metal Technology, v. 2, no. 1)
Order from PS $5.00

Trans. of Zavodskaya Laboratoriya (USSR) 1958 [v. 24] no. 11, p. 1308-1314.

Experimental data based on investigations with nickel alloys, and data from the literature are adduced to support the following conclusions: In separating phases, sharply different in thermodynamic properties, there is no need to attempt considerably to passivate the metal. Polarization of metallic phases depends more on the nature of the electrolyte and the anion content than on the nature of the metal. The strength of the surface chemical compounds on the anode depends on the charge and deformability of the predominant anion. Apart from the basic passivating agents (anions) there is introduced into the composition of the electrolytes still other activators, the role of which is played by anions of lower valence than the base of hydrogen ions or cations of lower valence metals. For the flowing of anode process in the area of the dissolution of surface compounds, it is necessary to sustain a correspondence between the rate of the electrochemical process and the rate of the chemical process of the formation of the surface compounds. The closer the separated phases are in properties, the greater the degree of passivity that is required because in this case the strength of the surface chemical compounds of the phases is appreciably different with the same anion. The temperature can also be important as an activator.

Köster, W.
THE EFFECT OF HIGH-TEMPERATURE HEAT TREATMENT ON ELECTROLYTIC NICKEL. [1959] 6p.
Order from ATS $9.50 ATS-31L30G

Trans. of Z[eitschrift für] Metallkunde (Germany) 1939, v. 31, no. 6, p. 168-170.

Linchevskiy, B. V.
THE VACUUM TECHNIQUE IN METALLURGY (Vakuumnaya Tekhnika v Metallurgiy). Aug 57, 4p. (1 fig. omitted) C. T. S. no. 356.
Order from LC or SLA mi$1.80, ph$1.80 59-14178

Trans. of *Metallurg (USSR) 1956, no. 7, p. 3-6.

Müller, Horst Guido.
RECRYSTALLIZATION TEXTURES OF FACE-CENTERED IRON-NICKEL-COPPER ALLOYS (Rekristallisationstexturen der Flächenzentrierten Eisen-Nickel-Kupfer-Legierungen). [1959] 12p. 19 refs.
Order from SLA mi$2.40, ph$3.30 59-15205

Trans. of Zeitschrift für Metallkunde (Germany). 1939, v. 31, [no. 10] p. 322-325.

Forty face-centered alloys of the ternary system Fe-Ni-Cu after 99% cold deformation were investigated for the beginning of recrystallization and for the development of recrystallization texture as a function of the heat treatment. A circumscribed temperature range of anomalous recrystallization at about 300° below the normal recrystallization temperature was established for certain hardenable alloys.

Pogodin-Alekseyev, G. I.
THE EFFECT OF ULTRASOUND ON DIFFUSION PROCESSES IN STEELS AND ALLOYS AT ELEVATED TEMPERATURES [Vliyaniye Ul'trazvuka na Diffuzionnyye Protsessy v Stalyakh i Splavakh pri Povyshennykh Temperaturakh]. 16 Dec 58, 6p. (6 figs. 2 photos omitted) 3 refs. JPRS Trans. L-572-N.
Order from OTS $0.50 59-13153

Trans. of Metallovedeniye i Obrabotka Metallov (USSR) 1958, no. 6, p. 14-17.
Another translation is available as HB-4247, $5.80.

A study of the influence of supersonics on the diffusion processes in heavier alloys at more elevated temperatures (700-1000°C) is described in which use is made of a more powerful source of ultrasonics, i. e. a 21.5-kc magnetostriction transducer of up to 5 kva. Since nickel magnetostriction elements are stable in operation only at relatively low temperatures, these elements were placed into a tank and intensely cooled with flowing water. The ultrasonics were transmitted by means of a steel waveguide, which was soldered on to a magnetostriction packet. The other end of the waveguide was located in the active cavity of the electric furnace and carried the small bath with the molten metal or the carburizer. Results show that ultrasonics are undoubtedly effective from the point of view of accelerating the process of aging and thermodiffusion saturation of the surface of the steel with carbon and other elements. The positive influence of the ultrasonic is attributed to the periodical changes in the parameters of the alloy lattice which facilitated diffusion processes i. e. saturation of the matrix or separation of excess phases.

Thews, Richard.
SAMPLING OF WHITE-METAL SCRAP AND RESIDUES WITH SPECIAL REGARD TO AMERICAN PRACTICE. [1959] [12]p. 1 ref.
Order from SLA mi$2.40, ph$3.30 59-15638

Trans. of [Chemisch-Metallurgische Zeitscrift; die] Metallbörse (Germany) [1931] v. 21, nos. 29, 31, and 33, p. 675-676, 723-724, and 771-772.

Wernet, Joseph.
METHOD FOR THE SEPARATION OF THE ELEMENTS TITANIUM, COLUMBIUM, AND TANTALUM FROM ONE ANOTHER. 3 Mar 59, 18p. 6 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15863

Trans. of German patent 838,604, appl. for 13 Sep 51, granted 3 Apr 52.

A method for the separation of the elements titanium, columbium, and tantalum from one another, is described. These elements are treated suitably up to saturation with ammonium chloride and/or potassium chloride and are saturated with hydrogen chloride at about 0° with stirring, and the solid phase containing titanium and columbium each according to proportion is separation from the solution containing the columbium or if necessary tantalum. In addition to titanium or titanium and columbium, other elements, for example, aluminum and tin, are separated; these from difficulty-soluble compounds in HCl-saturated solution or HCl-KCl-saturated or HCl-NH_4Cl-saturated solution.

Zelikman, A. N., Bibkova, V. I. and others.
A STUDY OF THE BEHAVIOR AND RECOVERY OF RHENIUM WHEN ROASTING MOLYBDENITE CONCENTRATES IN A FURNACE (Izucheniye Povedeniya i Ulavlivaniya Reniya pri Obzhiga Molibdenitovykh Kontsentratov v Pechi Kipyashchego Sloya) [1959] [8]p. (p. 57-64 of Soviet Metal Technology, v. 2, no. 1)
Order from PS $5.00

Trans. of Tsvetnyye Metally (USSR) 1958 [v. 31] no. 11, p. 47-52.

Roasting molybdenite concentrates in a boiling bed affords a sublimation of rhenium which reaches 92-96%. Existing systems of dust collection in the boiling bed furnace do not provide a satisfactory degree of rhenium recovery: losses with exhaust gases are about 80%. The possibility of recovering rhenium with the VSPU bubbling device designed by the State Institute of Non-Ferrous Metals was investigated. Recovery of rhenium by the bubbler, as shown by an analysis of the gas at entry and exit, equalled 89-96%.

Ferrous Metals

*STAL' (USSR) 1959 [V. 19] (Steel).
Order from OTS $0.70, $4.00/6 mo.
Foreign $0.95, $5.50/6 mo.

No. 1, p. 1-96, PB 141 136T-11
No. 2, p. 97-191, PB 141 136T-12
No. 3, p. 193-287, PB 141 136T-13

Consists of abstracts in English.

Litvinenko, D. A., Marinov, A. I. and others.
PRODUCTION AND PROPERTIES OF SHEETS OF NON-AGING STEEL, KILLED BY ALUMINUM (Proizvodstvo i Svoystva Uspokoyennoy Alyuminiyem Nestareyushchey Listovoy Stali) [1959] [16]p. 3 refs. (p. 31-46 of Soviet Metal Technology, v. 2, no. 1)
Order from PS $5.00

Trans. of Stal' (USSR) 1958 [v. 18] no. 10, p. 931-938.

The structural and mechanical properties of low-carbon steels for the manufacture of stamped automobile parts were tested. It was shown that it is advisable to use cold rolled sheets in which the process of mechanical aging is localized by stabilizing additions of aluminum. In deoxidation with aluminum shots in molds at 150-200 mm from the pouring level, the surface quality of the cold rolled sheets was higher than in killed steel deoxidized with aluminum in a ladle and bottom poured. Mold deoxidation requires approximately 50% less aluminum than ladle deoxidation.

Structural Metallurgy and Corrosion

Geier, K. and Reschke, L.
CORROSION OF LIGHT METAL SCREWS IN PHENOL RESIN PLASTICS. [1959] 2p. (1 fig. 1 table omitted).
Order from SLA mi$1.80, ph$1.80 59-15292

Trans. of ETZ [Elektrotechnische Zeitschrift. Ausgabe A. Zentralblatt für Elektrotechnik] (Germany) 1944, v. 65, p. 76-77.

Corrosion phenomena were observed on light metal screws used in junction boxes and conductor clamps made of phenol plastics. To determine the cause of the corrosion, Al-Mg-Si screws were screwed into plastic cases in the condition supplied or after various surface treatments and were submitted for 3 mo to the influence of a moist atmosphere at ordinary temperature. Anodized screws treated with distilled water or phenol resin lacquer, or those greased with various materials were not corroded under experimental conditions. The formation of condensed moisture, and not the effect of the plastics themselves seemed to be the cause of the corrosion.

Parfenov, V. A.
PROTECTIVE COATINGS OF HEAT RESISTANT ALLOYS [Zashchitnyye Pokrytiya Zharoprochnykh Splavov]. 16 Dec 58, 7p. (5 figs. omitted) 5 refs.
JPRS Trans. L-575-N.
Order from OTS $0.50 59-13156

Trans. of Metallovedeniye i Obrabotka Metallov (USSR) 1958, no. 6, p. 33-37.
Another translation is available as HB-4251, $4.85.

Results are described of investigations of the strength of specimens made of the alloy EI437B (20.10% Cr; 2.40% Ti; 0.71% Al; 0.04% C; 0.45% Si; 0.20% Mn; 0.005% S; 0.006% P; 0.60% Fe; 0.05% Cu; 0.05% Zr; the rest Ni) and of the alloy EI617 (composition as per standard specification); the active neck of the specimens was 8-mm in diam. Tests indicated that a 0.1-mm-thick chromium layer will bring about a 16% increase in the fatigue strength at 750°C of the alloy EI437B. A 0.1- to 0.2-mm-thick chromium layer will

bring about a 14% increase in the fatigue strength at 800°C of the alloy EI617 (50 x 10^6 cycles). With increasing number of test cycles, the effectiveness of chromating from the point of view of increasing the fatigue strength of the alloys EI437B and EI617 increases. During the tests at 800°C the electrolytic layer recrystallises with an appreciable speed and therefore application of chromium as a protective coating of components operating at temperatures above 800°C is inadvisable. Enamelling increases the fatigue strength of specimens of the alloy EI617 at 800°C (300 hrs) by 15% compared with the fatigue strength of reference specimens. Apparently, for increasing the effectiveness of enamelling, it is necessary to reduce the baking temperature of enamelled components.

Piskorskiy, B. Ye. and Il'ina, Ye. M.
PROTECTIVE ACTION OF VOLATILE INHIBITORS AND ANTICORROSION GREASES UNDER CONDITIONS OF TROPICAL TEMPERATURES AND HIGH HUMIDITY. [1959 5p.
Order from ATS $7.50 ATS-97L31R

Trans. of *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1959, v. 32, no. 1, p. 138-141.

Shvarts, G[alina] L[axarevna] and Kristal', M[inna] M[ironovna]
CORROSION OF CHEMICAL APPARATUS. 1959, 260p.
Order from CB $7.50

Trans. of Russian mono. [Korroziya Khimicheskoy Apparatyry, Moscow, 1958, 203p.]

Contents:
Chapter I. Causes of corrosion cracking of metals
Chapter II. Corrosion cracking of carbon and alloyed steels
Chapter III. Corrosion cracking of stainless steels
Chapter IV. Corrosion of non-ferrous metals and alloys
Chapter V. Methods of protection against corrosion cracking
Chapter VI. Testing methods

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

*ATOMNAYA ENERGIYA (USSR) 1958, 1959 (Atomic Energy).
Order from OTS $0.60, $3.50/6 mo.
Foreign $0.85, $5.00/6 mo.

1958, v. 5, no. 2, p. 105-212, PB 141 082T-13
1959, v. 6, no. 3, p. 245-364, PB 141 082T-14

Consists of abstracts in English.

THE SOVIET JOURNAL OF ATOMIC ENERGY, 1958, VOL. 4, NOS. 4-6, P. 443-810. 1959, 3 NOS.
Order from CB $20.00 each, $75.00/year

Trans. of Atomnaya Energiya (USSR)
1958, v. 4, no. 4, p. 337-[403].
1958, v. 4, no. 5, p. 409-[475].
1958. v. 4, no. 6, p. 503-[611].

Elementary Particles

Logunov, A. A., Solov'yev, L. D. and others.
DISPERSIONAL RELATIONS FOR VIRTUAL PHOTOPRODUCTION. [1959] 30p. 11 refs.
Order from LC or SLA mi$2.70, ph$4.80
AEC-tr-3588

Trans. of mono. pub. by Joint Institute for Nuclear Research, Moscow, 1958.

In this analysis of the process of interaction between a virtual photon with a nucleon in which a meson is produced, dispersion relations are obtained by the method of N. N. Bogolyubov, under the assumption that the amplitude of virtual photoproduction does not increase at high energies. The condition of gradient-invariance is used, making it possible to determine the deduction constants. In conversion to the center-of-mass system, the dispersion relations are written in the Lorentz-invariant form. The relation between the amplitude with the phase of the meson-nucleon scattering is investigated, and the dispersion relations are proved in the case of the absence of an unobserved energy region.

Vlasov, A. A.
MANY-PARTICLE THEORY. [1959] 413p. 45 refs.
Order from OTS $4.75 AEC-tr-3406

Trans. of mono. Theoriya Mnogikh Chastits, Moskva-Leningrad, 1950.

A generalization is presented of previous works published by the author in periodicals. The theory arose during the study of plasma, because of the need of a method taken into account interactions operating at distances greater than the mean distance between the particles. The theory expresses the independence of the extension of the particle on the physical conditions it encounters. A special method is used for calculating the connection of the particle with the surrounding medium, which results in a new approach to the concept of the closure of a physical system. Each particle is described by an extended function of the space distribution of coordinates and velocities. Applications are made to a theory of crystals, the vibration properties of plasma, the wave properties of a media consisting of neutral particles, and other problesm. The monograph is designed for both theoretical and experimental physicists.

Instruments and Installations

Koshkarev, D. G.
THE EFFECT OF GAS SCATTERING ON SYNCHROTRON OSCILLATIONS OF PARTICLES IN ACCELERATORS, tr. by P. Collins. Sep 58, 9p. 5 refs. NP-tr-214.
Order from LC or SLA mi$1.80, ph$1.80 59-14763

Trans. of Pribory i Tekhnika Eksperimenta (USSR) 1957, no. 2, p. 15-18.

The effect of non elastic scattering on the synchrotron oscillation of particles in circular proton accelerators is calculated to linear approximation. Formulas are obtained for evaluating the fraction of lost particles (neglecting damping of the oscillation) and for the increase of the mean square of the amplitude of the phase oscillations. The formulas, show that the losses arise basically at small energies. The magnitude of the effect depends on a number of the accelerator parameters, but apparently in actual accelerators does not exceed the effect of the elastic scattering on the betatron oscillations.

Paulin, Alojz.
THE MICROTRON. Apr 59 [11]p. 8 refs. T3Y.
Order from SLA mi$2.40, ph$3.30 59-15343

Trans. of Elektrotehnički Vesnik (Yugoslavia) 1957, v. 25, no. 9/10, p. 341-345.

A single-magnet microtron is described and the possible design of a double-magnet microtron is discussed.

Rozman, I. M.
DEPENDENCE OF THE LUMINESCENCE YIELD OF PLASTIC SCINTILLATORS WITH TRIPHENYLPYRAZOLINE ON TEMPERATURE (Zavisimost' vykhoda Lyuminestsentsii Plastmassovykh Stsintillyatorov s Trifenilpirazolinom ot Temperatury) tr. by Lydia Venters. Jan 59, 11p. 9 refs.
Order from LC or SLA mi$2.40, ph$3.30
AEC-tr-3568

Trans. of Optika i Spektroskopiya (USSR) 1957, v. 2, no. 4, p. 480-487.

The temperature dependence of the scintillation yield of polystyrene was studied--pure and with 1, 3, 5 triphenylpryazoline-Δ^2 (TPhP). --under excitation with α-, β-, and γ-rays at temperatures between 100 and 350°K. On excitation with α, β, γ-rays and with 2537 Å the temperature dependence of the photomultiplier current becomes flatter as the concentration of TPhP increases. Direct excitation of the TPhP molecules by 3650-3663 Å produces scintillation independent of temperature. The quantum yield of pure polystyrene for all excitations decreases from 0.20 at 130°K to 0.07 at 330°K. Luminescence spectra of polystyrene with TPhP show no polystyrene emission.

Tsitovich, A. P. and Efremenko, V. I.
MEMORY APPARATUS FOR OBSERVING SINGLE EVENTS ON A CATHODE-RAY OSCILLLOGRAPH, tr. by P. Collins. 18 Oct 58, 9p. (7 figs omitted) 2 refs. NP-tr-216.
Order from LC or SLA mi$1.80, ph$1.80 59-14383

Trans. of Prib[ory] i Tekh[nika] Eksp[erimenta] (USSR) 1958, no. 3, p. 58-61.

A memory apparatus for observing single events on a cathode ray oscillograph is proposed. The apparatus comprises a two-beam cathode ray tube and a magnetic drum. The event to be memorized is applied to the modulating plates of the recording beam of the cathode ray tube and traced across the screen. The beam leaves charges on the screen by secondary emission. To store this potential trace of the recording beam, a transparent grid is placed across the screen to pick up the charges when the screen is scanned in the vertical direction by the reading beam of the tube. The signals picked up by the grid are amplified and stored on a magnetic drum that incorporates a timing track which synchronizes the vertical sweeps of the reading beam. This beam synchronism and the magnetic drum transfers the potential trace on the screen into a new co-ordinate system stored on the magnetic drum, amplifies, and applies it to the modulating electrodes of the reading beam. The points corresponding to the intersection of the lines of the reading beam with the potential trace are illuminated, and the investigated event is displayed on the cathode ray tube. A recording speed of 4 used/100 mm of screen was obtained from a test model with a 18L047 tube.

PHYSICS

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. PHYSICAL SERIES, 1958, VOL. 22, NOS. 3, 4, P. 231-477. 1959, 2 NOS.
Order from CTT $20.00 each, $215.00/year

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya
1958, v. 22, no. 3, p. 235-[359].
1958, v. 22, no. 4, p. 363-[464].

IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENY. FIZIKA (USSR) 1958, NO. 5, P. 3-176 (News of Institutes of Higher Learning, Physics). [1959] 1v. SOV-139-58-5-(1-35)/35.
Order from OTS $0.90, $5.25/year PB 141 043T-2
Foreign $1.15, $6.75/year

Consists of abstracts in English.

*PRIBORY I TEKHNIKA EKSPERIMENTA (USSR) 1958, NO. 6, P. 3-130 (Instruments and Experimental Techniques). [1959] 1v. SOV-120-58-6-(1-32)/32.
Order from OTS $0.80, $4.75/year PB 141 120T-7
Foreign $1.05, $6.25/year

Consists of abstracts in English.

REFERATIVNYY ZHURNAL. FIZIKA (USSR) 1959, NO. 2, Abstracts 2512-4670 (Soviet Abstracts. Physics). 1 June 59, 136p. JPRS: 1652-N.
Order from OTS $1.00 59-13575

Contents:
Section B. Theoretical Physics
Section C. Nuclear Physics
Section D. Atomic and Molecular Physics
Section E. Solid State Physics
Section F. Magnetism
Section G. Electricity
Section H. Electronics
Section I. Radio Physics
Section J. Acoustics
Section K. Optics

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia, excluding the Soviet Union.

SOVIET PHYSICS JETP, 1959, VOL. 35(8), NO. 4, P. 577-742. Apr 59, 1v.
Order from AIP $8.00, $75.00/year

Trans. of Zhurnal Eksperimentalnoy i Teoreticheskoy Fiziki (USSR) 1958, v. 35 [no. 4] p. 833-1063.

*ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI (USSR) 1958, 1959 (Journal of Experimental and Theoretical Physics).
Order from OTS $1.40, $7.50/6 mo.
Foreign $1.65, $9.00/6 mo.

1958, v. 35, no. 5, p. 1065-1318, PB 141 052T-8
1958, v. 35, no. 6, p. 1321-1584, PB 141 052T-9
1959, v. 36, no. 2, p. 345-648, PB 141 052T-10

Consists of abstracts in English.

Basov, N. G. and Prokhorov, A. M.
APPLICATION OF MOLECULAR BEAMS TO RADIOSPECTROSCOPIC STUDY OF ROTATIONAL SPECTRA OF MOLECULES (Primeneniye Molekulyarnykh Puchkov dlya Radiospektroskopicheskogo Izucheniya Vrashchatel'nykh Spektrov Molekul) tr. by M. Slade. [1959] [14]p. (equations, 1 illus. omitted) 2 refs. Trans. no. 3062.
Order from LC or SLA mi$2.40, ph$3.30 59-15045

Trans. of Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (USSR) 1954, v. 27, no. 4, p. 431-438.

Methods of utilization of molecular beams for the study of rotational spectra of molecules are discussed. The use of molecular beams makes it possible to obtain narrow spectra lines of approximately 7 kc width and to study the rotational spectra of substances which under normal conditions are in the solid state.

Podstrigach, Y. A.
THERMAL FIELD IN THIN SHELLS (Temperaturnoye Pole v Tonkhikh Obolochkakh) tr. by H. H. [1959] 5p. 1 ref. H-2480-A.
Order from OTS $0.50 59-11943

Trans. of Akademiya Nauk URSR, Kiev. Dopovidi, 1958, no. 5, p. 505-507.

Equations are derived for the moments and stresses on a thin shell in terms of an orthogonal curvilinear system of coordinates, and a particular formula is given for the case of the stresses being zero.

Rodionov, A. N., Shigorin, D. N. and others.
INFRARED SPECTRA OF ORGANOLITHIUM COMPOUNDS. INTERMOLECULAR LITHIUM BOND. [1959] 5p.
Order from ATS $5.35 ATS-60L31R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, v. 123, no. 1, p. 113-116.

Acoustics

*AKUSTICHESKIY ZHURNAL (USSR) 1959, V. 5, No. 1, P. 4-128 (Journal of Acoustics). [1958] 1v. SOV-46-5-1-(1-24)/24.
Order from OTS $0.60, $2.25/year PB 141 039T-6
Foreign $0.85, $3.25/year

Consists of abstracts in English.

Barkhatov, A. N. and Shmelev, I. I.
ATTENUATION OF A SOUND BEAM WHEN PASSING THROUGH A LAYER WITH DISCONTINUITY OF SOUND VELOCITY. [1959] [4]p. 2 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15796

Trans. of *Akusticheskiy Zhurnal (USSR) 1958, v. 4, no. 2, p. 125-127.

The attenuation of sound, experimentally determined in its passage through a layer with a discontinuity of sound velocity, is compared with that obtained when calculating the spreading of a beam tube in a layer.

Glotov, V. P.
THE REVERBERATION TANK METHOD FOR STUDYING SOUND ABSORPTION IN THE SEA. [1959] [6]p. 15 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15779

Trans. of *Akusticheskiy Zhurnal (USSR) 1958, v. 4, no. 3, p. 239-243.

The reverberation tank method for the local study of sound absorption in the sea at different depths, is described. A description is given of a marine tank apparatus. The results are given of the study of sound absorption at frequencies of 15 to 80 kc.

Polyakova, A. L.
ON THE ABSORPTION OF A SOUND OF FINITE AMPLITUDE IN A RELAXING MEDIUM. [1959] [4]p. 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15804

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1958, v. 122, no. 1, p. 51-53.

Absorptions are studies of a sound wave of finite amplitude in a medium, where possible internal processes are associated with the transition of energy of longitudinal motion of the molecules to internal degrees of freedom. These processes reduce to a relaxation and consequently, to an additional absorption of a sound whose frequency is near to the relaxation frequency.

Electricity and Magnetism

Frenkel, Ya. I. and Shishkin, N. S.
THE ROLE OF COAGULATION IN THE ORIGIN OF LIGHTNING DISCHARGES. I. [1959] 12p.
Order from LC or SLA mi$2.40, ph$3.30 59-15564

Trans. from Akad[emiya] Nauk SSSR. Izv[estiya]. [Seriya Fizicheskaya] 1946, v. 10, no. 4.

Itterbeek, A. van and Greve, L. de.
MEASUREMENT OF THE ELECTRICAL RESISTANCE OF THIN FILMS OF Cu, Ag, and Pb.
6 June 46, 6p. (1 table, 6 figs. omitted).
Order from SLA mi$1.80, ph$1.80 59-15283

Trans. of Physica (Netherlands) 1944, v. 11, no. 2, p. 78-90.

The films (10- to 100-mμ thick) were obtained by cathodic sputtering. Their resistance was measured between room temperature and that of boiling point of hydrogen. The temperature coefficient of Cu and Ag films is much smaller than that of the ordinary metals and may even become negative for a thickness of 3 mμ in the case of Cu and 4.5 mμ in the case of Ag. The temperature coefficient of Pb films is almost equal to that of the ordinary metal and does not change as a function of its thickness. The specific resistivity of the Cu and Ag films may be expressed by the formula of Hamburger, log rho = A. log D+B, in which A = -1.0 and B = -3.3 for Cu and -0.6 and -4.1 for Ag. The Mattheissen rule furnishes satisfactory values for the residual resistance of Cu and Ag films but is not satisfactory in the case of Pb films.

Yeremeyeva, G. and Berdyshev, A.
ANTIFERROMAGNETISM OF TRANSITION METALS ACCORDING TO A COLLECTIVIZED ELECTRON MODEL, tr. by Morris D. Friedman. 6 Apr 59, 4p. 8 refs. TE-10.
Order from LC or SLA mi$1.80, ph$1.80 59-14737

Trans. of *Fiz[ika] Met[allov] i Metallov[edeniye] (USSR) 1958, v. 6, no. 5, p. 929-930.

The case of a rectangular band is considered in which $\nu(\epsilon) = \epsilon_0 (N/2)$, where N is the number of electrons, and ϵ_0 the Fermi energy. Then, instead of previous equations of A. E. Lidiard (Proc. Roy. A224: 161, 1954) for determining the behavior of the electron system, the following are obtained:

$$1 \pm \zeta_A = \frac{kT}{\epsilon_0} F_0[\eta_A \pm \frac{1}{kT}(\mu H + k\theta_1 \zeta_A + k\theta_{12} \zeta_B)],$$

$$1 \pm \zeta_B = \frac{kT}{\epsilon_0} F_0[\eta_B \pm \frac{1}{kT}(\mu H - k\theta_1 \zeta_B - k\theta_{12} \zeta_A)],$$

where ζ_A and ζ_B are the relative magnetizations of the sub-lattices and

$$F_n(z) = \int_0^\infty x^n [\exp(x - z) + 1]^{-1} dx$$

is the Fermi-Dirac function of order n.

Optics

Gamo, Hideya.
AN IMPROVEMENT ON THE NIJBOER-NIEHUIS METHOD FOR CALCULATING DIFFRACTION PATTERNS. [1959] 5p. 7 refs. T-3033.
Order from SLA mi $1.80, ph$1.80 59-15594

Trans. of [Oyô Butsuri] (Japan) 1959, v. 27, no. 10, p. 633-634.

Joichi, Nobuyoshi.
THE EFFECT OF GROUND GLASS ON THE COHERENCY OF TRANSMITTED OR REFLECTED LIGHT. [1959] 8p. 12 refs.
Order from SLA mi$1.80, ph$1.80 59-15593

Trans. of [Oyô Butsuri] (Japan) 1958, v. 27, no. 10, p. 634-636.

The relation between the roughness of ground glass and the coherency of light was experimentally determined. Two beams were transmitted through or reflected from ground glass and passed through double slits where the visibility of the interference fringes was measured. The cohrency k, was decreased by the surface. Therefore, the mean value, k, may be one of the parameters in showing surface roughness. The destruction of coherency was greater on the rougher surface. This indicates that the rougher ground glass is better for obtaining incoherent light.

Zamorskiy, A. D.
ROSE-COLORED OVERCAST SKY. [1959] 2p. 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15559

Trans. of Meteorologiya i Gidrologiya (USSR) 1956, no. 7, p. 27-28.

A description and brief explanation are given for a pink glow in the clouds over Leningrad on several mornings in 1951 and 1954.

Solid State Physics

*KRISTALLOGRAFIYA [MOSCOW] (USSR) 1958, VOL. 3, NO. 1, P. 3-132 (Crystallography). [1959] 1v. SOV-70-3-1-(1-26)/26.
Order from OTS $0.70, $4.00/year PB 141 065T-5
Foreign $0.95, $5.50/year

Consists of abstracts in English.

*OPTIKA I SPEKTROSKOPIYA (USSR) 1959, V. 6, NO. 1, P. 3-128 (Optics and Spectroscopy). [1959] 1v. SOV-51-6-1-(1-30)/30.
Order from OTS $0.70, $4.00/6 mo. PB 141 047T-13
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

PRODUCING CRYSTALLIZED SILICON OF HIGHEST PURITY. [3 Apr 59] 9p.
Order from RIS $21.00 RIS rept. 97017

Trans. of German patent application W 21 848 (12i, 38) DAS 1 047 181, filed 7 Sep 57; pub. 24 Dec 58, by Wacker-Chemie G. m. b. H., Munich.

A process is described for producing extremely pure, crystallized silicon by heating of silicon halides or halosilanes. In one part of a reactor silicon halides and/or halosilanes, or silicon halides alone with hydrogen, and/or hydrogen-donating silicon compounds are heated to temperatures ranging from red heat to 1400°C, and at the same time by-products and impurities are continuously removed from the reactor by means of liquid reactants and other silicon halides which precipitate in vicinal, cooled areas of the reactor.

Abrikosov, N. Kh., Vasserman, A. M., and Poretskaya, L. V.
INVESTIGATION OF THE SnTe-GeTe SYSTEM. 4 Mar 59, 5p. 12 refs. TA-24.
Order from LC or SLA mi$1.80, ph$1.80 59-14571

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1958, v. 123, no. 2, p. 279-281.

A thermal analysis, a microstructure investigation, an X-ray analysis, and a study of the alloy properties of the Sn-Ge-Te system showed that a continuous series of solid solutions with a minimum on the fusibility diagram is formed in the cross-section between the nonisostructural compounds SnTe and GeTe; the face-centered cubic lattice of the compound SnTe gradually transformed into the face-centered rhombohedric lattice of the GeTe compound.

Dudkin, L. D. and Ostranitsa, A. P.
TERNARY SEMICONDUCTING COMPOUNDS $A^{I}B^{V}B_2^{VI}$. 5 Mar 59, 7p. 5 refs. TD-16.
Order from LC or SLA mi$1.80, ph$1.80 59-14570

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1959, v. 124, no. 1, p. 94-97.

The existence and physico-chemical nature of hypothetical ternary compounds of the general composition $A^{I}B^{V}B_2^{VI}$ (A^{I} - Cu, Ag; B^{V} - Sb, Bi; B^{VI} - Se, Te) was investigated whose formation, by analogy with the chalcopyrite-like group of semiconducting compounds $A^{I}A^{III}B_2^{VI}$ (A^{III} - Al, Ga, In, Tl), is assumed to be in ternary systems A^{I} -- B^{V} - B_2^{VI} and to lie in the quasibinary sections $A_2^{I}B^{VI}$ - $B_2^{V}B_3^{VI}$ with a 1:1 ratio between the components. Eight alloys were prepared on the basis of the appropriate binary compounds by fusing the initial components in evacuated quartz ampoules with the melt cooled in air. The alloys were investigated by methods similar to those described earlier (Zhur. Neorg. Khim. 1: 69 and 2096, 1956). Microstructure of the cast samples established that four of the eight $A^{I}B^{V}B_2^{VI}$ compounds actually exist: $CuSbSe_2$, $AgSbSe_2$, $AgSbTe_2$ and $AgBiSe_2$ which crystallize directly from the melt. The sample of the $AgSbTe_2$ composition contained a small deposit of the tellurium eutectic along the grain boundaries, which probably is related to a phase shift of this compound toward excess antimony. The microstructure of the $CuSbTe_2$ and $CuBiTe_2$ alloys is of eutectic type; the $CuBiSe_2$ and $AgBiTe_2$ appear to be diphasal. Annealing of the alloys at a temperature of 350° for 2 weeks did not lead to any marked change in the microstructure. A thermal effect was observed for the $AgBiSe_2$ compound at 298°: it is related to a polymorphic transformation of the ternary compound. The alloys of $CuSbSe_2$, $AgSbSe_2$ and $AgBiSe_2$ have the $\rho(T)$ dependence characteristic of semiconducting substances. For the last compound, a sharp bend in the $\ln \rho(1/T)$ curve was noted at a temperature close to the temperature of its polymorphic transformation. X-ray powder diagrams of the ternary alloys showed that $AgSbSe_2$ and $AgSbTe_2$ have cubic face-centered lattices with constants (a) equal to 5.77 and 6.07 Å, respectively. The compound $CuSbSe_2$ and the α-modification of the compound $AgBiSe_2$ have a more complex structure.

Natta, Giulio, Corradini, Paolo, and Cesari, Marco.
QUANTITATIVE DETERMINATION OF THE CRYSTALLINITY OF POLYPROPYLENE. [1959] 13p. 9 refs.
Order from SLA mi$2.40, ph$3.30 59-15002

Trans. of [Academia Nazionale de] Lincei. [Classe di] Sc[ienze] Fiz[iche] Mat[ematiche] e Nat[urali] Rend[iconti] (Italy) 1957 [ser. 8] v. 22, Jan, p. 11-17.

The crystallinity of polypropylene was found to vary in accordance not only with the thermal treatments undergone by the samples, but also with the method of preparation. In order to determine the crystallinity of the samples an X-ray spectrometer was used in a range of 2θ between 4° and 30° and the method was verified by examination of artificial mixtures. The X-ray method proposed by Bryant for the determination of the crystallinity of polyethylene is of general validity and can be extended to other crystalline polymers.

Rashba, E. I.
THEORY OF STRONG INTERACTIONS OF ELECTRON EXCITATIONS WITH LATTICE VIBRATIONS IN MOLECULAR CRYSTALS. [1959] 20p. 10 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15899

Trans. of Optika i Spektroskopiya (USSR) 1957, v. 2, [no. 1] p. 75-98.

Formulae are obtained to determine how the energy of excited states in a molecular crystal depends on lattice deformation (i.e., the shape of energy surfaces) and on the wave-functions of the excited states in a deformed crystal. A general condition is found under which plane waves appear as self-consistant solutions; this applies to excitons in molecular crystals and other three-dimensional systems with short range forces. The states with a nondeformed lattice and a free exciton correspond to minima of the energy surfaces.

Sevchenko, N. A. and Florinskaya, V. A.
REFLECTION SPECTRA OF QUARTZ CRYSTAL PLATES CUT AT DIFFERENT ANGLES TO THE OPTICAL AXIS WITHIN THE 7-24μ WAVELENGTH RANGE. [1959] 6p. 6 refs. T-2869.
Order from LC or SLA mi$1.80, ph$1.80 59-15026

Trans. of Optika i Spektroskopiya (USSR) 1958, v. 4, no. 2, p. 261-264.

Results are given of an investigation of reflection spectra of α-quartz crystal plates cut at an angle of 0°, 20°, 45°, 70°, 80° and 90° to the optical axis within the 7 to 24μ range of wavelengths. The first basic reflectance band located within the 8 to 10μ range and existing as a doublet with maxima at 8.50 and 8.95μ retains its position and general aspect on all curves. Only the resolution of the doublet and the fine structure of this band change. The second basic reflectance band, which is located within the 12-13μ range also exists as a doublet. When the angle at which the plate has been cut is changed, the position of individual components of this doublet is preserved but intensities are changed sharply. The band at 14.53μ which is specific only for the quartz lattice retains its position on all the curves but its intensity changes considerably. The angle at which the quartz plate is cut in relation to the optic axis of the crystal has a very strong effect on the long wavelength bands at 18. to 19.5 and 19.5 to 24μ. At the same time, in contrast to all preceding bands, both the band at 18 to 19.5μ which is also specific only for the quartz crystal lattice, and the band located within the 19.5 to 24μ range not only change strongly in intensity but also shift within a wide range of wavelengths.

Yefimov, Ye. A. and Yerusalimchik, I. G.
INVESTIGATION OF HYDROGEN OVER-VOLTAGE ON GERMANIUM. 12 Feb 59, 9p. 10 refs. TE-7.
Order from LC or SLA mi$1.80, ph$1.80 59-15004

Trans. of Zh[urnal] Flz[icheskoy] Khim[ii] (USSR) 1958, v. 32, no. 9, p. 1967.-1970.

The kinetics of the cathodic liberation of hydrogen by electron- and hole-conducting single-crystal germanium was investigated in the 10^{-5} to 10^{-1} A/sq cm current density range in O.1N HCl at 20° with and without the admixture of surface-active substances. Germanium was found to be a metal with a high hydrogen over-voltage. The kind of conduction of the germanium cathode does not influence the hydrogen liberation process. The electro-chemical liberation of hydrogen by germanium occurs according to the retarded charge mechanism in complete agreement with the theory of A. N. Frumkin. et al.(Kinetics of the electrode processes. Moscow Univ. Press, 1952.)

Theoretical Physics

USPEKHI FIZICHESKIKH NAUK (USSR) 1958 (Progress of Physical Sciences).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

1958, v. 66, no. 4, p. 545-710, PB 141 049T-10
1959, v. 67, no. 1, p. 3-190, PB 141 049T-12
1959, v. 67, no. 2, p. 193-376, PB 141 049T-11

Consists of abstracts in English.

Bogolyubov, N. N.
ON THE THEORY OF THE SUPERCONDUCTING STATE. 22 Jan 59, 14p. 3 refs. TB-42
Order from LC or SLA mi$2.40, ph$3.30 59-10993

Trans. of Nauchn[yye] Dokl[ady] Vyssh[ey] Shkol[y]. [Fiziko-matematicheskiye Nauki] (USSR) 1958, no. 1, p. 3-11.

An extension is presented of a previous method (Zhur. Eksp. i Teoret. Fiz. 34: 58, 1958) that permitted the development of a consistent theory of superconductivity. Instead of an expansion in powers of the electron-phonon interaction constant, as used previously, expansions are obtained in powers of the nondimensional parameter $\rho = g^2(dn/dE)$. The parameter ρ takes the

value of approximately 1/2. The phonon energy is renormalized. This raises the accuracy of the approximation by preventing the annihilation of the ratio of the energy of a sound quantum to the Fermi energy. (See also 59-16657)

Proskuryakev, A. P.
A CONTRIBUTION TO THE CONSTRUCTION OF PERIODIC SOLUTIONS OF AUTONOMOUS SYSTEMS WITH ONE DEGREE OF FREEDOM. [1959] 11p. 2 refs. F-TS-9453/III.
Order from LC or SLA mi$2.40, ph$3.30 59-16058

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1957, v. 21, no. 4. p. 585-590.

Periodic solutions are constructed on the basis of the method of small parameters, making use of the van der Pol variables. No averaging of the equations are used. The method described is a combination of the method of small parameters with the van der Pol method. Formulas are derived for the calculation of three approximations for the amplitude and for the correction of the period of oscillations.

Wave Propagation

Klinker, L.
INFORMATION CONCERNING THE LONG RANGE PROPAGATION MECHANISM FOR WAVELENGTHS IN THE METER RANGE AS OBTAINED BY MEANS OF TROPOSPHERIC DRIFT MEASUREMENTS. [1959] 10p.
Order from ATS $12.05 ATS-19L31G

Trans. of Z[eitschrift für] Meteorol[ogie] (Germany) 1957, v. 11, no. 2, p. 43-49.

Stanyukovich, K. P. and Golitsyn, G. S.
SHOCK WAVES. 21 May 59, 11p. (6 figs. omitted) 4 refs. JPRS: 1595-N.
Order from OTS $0.50 59-13529

Trans. of Priroda (USSR) 1958 [v. 47] no. 13, p. 33-38.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

ACADEMY OF SCIENCES OF USSR. 6 Feb 59 [50]p. US rept. no. 1255512.
Order from LC or SLA mi$3.30, ph$7.80 59-12983

Translation compiled from Soviet open sources, 1945-1958.

Contents:
Academy of Sciences of USSR - a brief history
Organization of the Academy of Sciences
Establishments under the direct supervision of the Academy
Departments
Physical and mathematical sciences
Chemical sciences
Geological sciences
Biological sciences
Technical sciences
Historical sciences
Economics, philosophy and law
Literature and language
Siberian department
Branches of the Academy
List of the academicians, January 1, 1959
List of periodical publications, January 1, 1959

AKADEMIYA NAUK SSSR. DOKLADY, 1958, V. 123 (Reports of the Academy of Sciences of the USSR) [1959]
Order from OTS $1.40, $20.00/6 mo.
Foreign $1.65, $24.50/6 mo.

No. 1, p. 9-207, PB 141 015T-20
No. 3, p. 391-575, PB 141 015T-19

Consists of abstracts in English.

AKADEMIYA NAUK SSSR. OTDELENIYE TEKHNICHESKIKH NAUK. IZVESTIYA, 1958 (News of the Academy of Sciences of the USSR, Department of Technical Sciences).
Order from OTS $1.00, $5.50/6 mo.
Foreign $1.25, $7.00/6 mo.

No. 5, p. 3-144, PB 141 019T-5
No. 9, p. 3-160, PB 141 019T-6

Consists of abstracts in English.

MACHINE TRANSLATION FROM FRENCH [AND] MATHEMATICS ASSISTS LINGUISTICS. Rept. on Soviet Developments in Machine Translation. 27 Mar 59, 12p. JPRS: 621-D.
Order from OTS $0.50 59-11475

Trans. of Izvestiya Vysshikh Uchebnykh Zavedeniy. Matematika (USSR) 1958, no. 5, p. 46-51 and Pravda, Leningrad (USSR) 1958, 4 Dec, p. 4.

Work on machine translation from French into Russian was begun at the Institute of Mathematics, USSR Academy of Sciences, in 1954. The mathematical dictionary evolved stores only stems of words, with indications of parts of speech, inclusion within an idiomatic phrase, grammatical characteristics etc. The dictionary is recorded on magnetic tape, broken down into 26 zones occupying about 12000 cells. Translation of a 10 word sentence takes about 2 min and requires approximately 50000 cycles, of which 20000 are used by the dictionary lookup program.

NAUKA I ZHIZN' (USSR) 1959 [V. 26] NO. 3, P. 1-80 (Science and Life). [1959] 1v. SOV-25-59-3-(1-46)/46.
Order from OTS $0.70, $4.00/6 mo. PB 141 020T-12
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

SCIENTIFIC INFORMATION REPT.
Order from OTS $2.75, $28.00/year
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20 Mar 59, PB 131 891T-18
3 Apr 59, PB 131 891T-19
5 June 59, PB 131 891T-23

Consists of unevaluated information extracted from publications of USSR, Eastern Europe, and China.

Ryabushkin, Yu. V.
THE EFFECT OF IMAGE MOTION ON PHOTOGRAPHIC RESOLVING POWER. [1959] 18p. 6 refs. T-3001.
Order from LC or SLA mi$2.40, ph$3.30 59-15793

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1958, v. 3, no. 3, p. 197-206.

Present assumptions on the factors determining the resolving power of the photographic system under normal conditions, show that a moving test object can be regarded as a test object of reduced contrast. The dependence of the contrast of the moving test object upon its initial contrast, frequency of lines of the pattern, motion, and the shutter efficiency, was determined. This dependence in connection with the dependence of the resolving power of the aberration system upon the contrast of the test object (Doklady Akad. Nauk SSSR 85: 1001, 1952) can be used for determining the resolving power of an image in motion. A graphic method of calculation is suggested and simple formulas are given which can be used for calculating the resolving power during image motion by taking into account the shutter efficiency. Satisfactory agreement was obtained between the experimental and the calculated determinations of the effect of image motion upon resolving power. The calculation according to Antilli's formula (Phot. Eng. 6: 270, 1955) can give satisfactory results only if the image motion is very great and if an ideal shutter of the photographic camera (efficiency equal 1) is used for the exposure.

Smetanin, N. I.
METHODOLOGY OF SELECTING DUST SAMPLES FROM THE AIR WITH PARTICLE SIZES OF LESS THAN FIVE MICRONS FOR LABORATORY AND EXPERIMENTAL INVESTIGATION. 7 Apr 59, 5p. (2 figs. omitted) 4 refs. JPRS: L-698-N.
Order from OTS $0.50 59-13317

Trans. of Gigiyena Truda i Professional'nyye Zabolevaniya (USSR) 1958, v. 2, no. 2, p. 52-54.

A simple device is described for the isolation and collection of dust fractions with particle sizes of five microns and less from dusty air. The device developed is based on the principle of air separation with the use of centrifugal force.

BOOK REVIEWS

The following book reviews can be ordered by number from OTS for 50 cents. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and a detailed table of contents. The length of each review is indicated at the end of the entry.

BR-SOV/1397
Fedorenko, Nikolay Prokof'yevich
NARODNOKHOZYAYSTVENNOYE ZNACHENIYE SINTETICHESKIKH MATERIALOV (Significance of Snythetic Materials in the National Economy) Moscow, Izd-vo "Znaniye," 1959. 47 p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya III, 1959, no. 1) 56,000 copies printed.

A historical analysis of the development of chemical technology in the Soviet Union. 2p.

BR-SOV/1483
Kostenko, Heorhiy Mykolayevych
TEKHNICHNA TERMODYNAMIKA (Technical Thermodynamics) Kyyiv, Derzhtekhvydav, 1958. 419 p. 1,000 copies printed.

A textbook approved for students specializing in heat engineering at engineering vtuzes. 7p.

BR-SOV/1513
Maslov, Dmitriy Petrovich, Vladimir Viktorovich Sasov, and Pavel Grigor'yevich Nizhanskiy
TEKHNOLOGIYA AVTOMOTOSTROYENIYA (Technology of Building Automobile Motors) 2nd ed. Moscow, Mashgiz, 1958. 694 p. 15,000 copies printed.

A textbook describing fundamental machining operations and problems connected with planning machine shops in automobile plants. 10p.

BR-SOV/1518
Kal'kutin, Vasiliy Afanas'yevich, and Vasiliy Mitrofanovich Mitrofanov
REVIZIYA I KONTROL' KHOZYAYSTVENNOY DEYATEL'NOSTI PROMYSHLENNYKH PREDPRIYATIY (Audit and Control of the Economic Activity of Industrial Establishments) 2nd ed., rev. and enl. Moscow, Gosfinizdat, 1957. 279 p. 5,000 copies printed.

A textbook for finance and economics institutes and faculties. 5p.

BR-SOV/1540
Vsesoyuznaya konferentsiya po yadernym reaktsiyam pri malykh i srednikh energiyakh. Moscow, 1957
TRUDY KONFERENTSII (Transactions of the All-Union Conference on Nuclear Reactions at Low and Medium Energies) Moscow, Izd-vo AN SSSR, 1958. 614 p. 3,000 copies printed.

A collection of papers read at the Conference held at Moscow from November 19-27, 1957. 8p.

BR-SOV/1554
Terent'yev, Boris Petrovich
ELEKTROPITANIYE RADIOUSTROYSTV (Electric Power Supply for Radio Equipment) 2nd ed., rev. and enl. Moscow, Svyaz'izdat, 1958. 239 p. 25,000 copies printed.

A discussion of sources and methods of power supply for various types of radio facilities. 5p.

BR-POL/1559
Huber, Maksymilian Tytus
STEREOMECHANIKA TECHNICZNA; WYTRZYMAOSC MATERIAOW, (Engineering Stereomechanics; Strength of Materials) 2d ed. Warezawa, Panstwowe Wydawnictwo Naukowe, 1958. 722 p. 5,200 copies printed.

A textbook conforming to the teaching program of the five-year uniform course in mechanics of materials given in technical institutions of higher learning. 11p.

BR-GER/1560
Dierichs, Alfred and Rudolf Kubicka
PHENOLE UND BASEN; VORKOMMEN UND GEWINNUNG) (Phenols and Bases; Occurrence and Production Berlin, Akademie-Verlag, 1958. 472 p. No. of copies printed not given.

Various methods for the production of phenol and its homologs from benzene. 7p.

BR-GER/1561
FLIEGER-JAHRBUCH 1959; EINE INTERNATIONALE UMSCHAU DES LUFTVERKEHRS (Airman's Yearbook for 1959; International Survey of Air Traffic) Berlin, Verlag Die Wirtschaft [1958] 172 p. Number of copies printed not given.

Reports by various authors on international air traffic and the aircraft industry. 3p.

BR-CZECH/1562
Weber, Antonin
VELMI KRATKE VLNY (Microwaves) Prague, SNTL, 1957. 335 p. (Series: Mala elektrotechnicka knihovna, sv. 10) 5,250 copies printed.

A discussion, for readers with a secondary technical education, of propagation of electromagnetic waves. 3p.

BR-SOV/1573
Kokarev, Nikolay Ivanovich, Petr Pimenovich Semenenko, Nikolay Georgiyevich Kamkin, and Yevgeniy Stepanovich Popov
ULUCHSHENIYE KONSTRUKTSIY I EKSPLUATATSII MARTENOVSKIKH PECHEY S OSNOVNYMI SVODAMI (Improvements in Design and Operation of Open-hearth Furnaces With Basic Roofs) Sverdlovsk, Metallurgizdat, 1958. 55 p. 3,000 copies printed.

An examination of the problems of improving the design of open-hearth furnaces with magnesio-chromite basic roof linings. 2p.

BR-SOV/1582
Movnin, Mikhail Savel'yevich
DETALI MASHIN (Machine Parts) Leningrad, Sudpromgiz, 1958. 291 p. 35,000 copies printed.

The final part of a course on "Engineering Mechanics". 5p.

BR-SOV/1592
Akademiya nauk SSSR. Institut mashinovedeniya
OSNOVNYYE VOPROSY TOCHNOSTI, VZAIMOZAMENYAYEMOSTI I TEKHNICHESKIKH IZMERENIY V MASHINOSTROYENII (Basic Problems of Accuracy, Interchangeability and Engineering Measurements in Machine Building) Moscow, Mashgiz, 1958. 411 p. 4,500 copies printed.

A collection of articles presenting the works of a conference convened in March 1956 by the Machine Building Technology Commission. 4p.

BR-SOV/1606
Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki
AVTOMATIKA I TELEMEKHANIKA; SBORNIK (Automation and Telemechanics; Collection of Articles) Moscow, Izd-vo AN SSSR, 1958. 144 p. 5,000 copies printed.

Presented at the fourth and fifth scientific and technical conferences of the Institute of Automation and Telemechanics of the USSR Academy of Sciences. 4p.

BR-SOV/1607
Sandler, Abram Solomonovich
ELEKTROOBORUDOVANIYE PROIZVODSTVENNYKH MEKHANIZMOV; ELEKTROOBORUDOVANIYE METALLOREZHUSHCHIKH STANKOV (Electrical Equipment for Industrial Machinery; Electrical Equipment for Metal-cutting Machine Tools) Moscow, Gosenergoizdat, 1958. 238 p. 20,000 copies printed.

A handbook for engineering workers and students designing and constructing industrial electrical equipment. 5p.

BR-SOV/1608
Rusanov, A. K. and N. V. Il'yasova
ATLAS PLAMENNYKH, DUGOVYKH I ISKROVYKH SPEKTROV ELEMENTOV; DLYA OBLASTEY SPEKTROV: PLAMENNYKH --2800-9000 Å, DUGOVYKH I ISKROVYKH-- 2100-6700 Å. (Atlas of Flame, Arc and Spark Spectra of Elements; With Spectrum Range From 2800 to 9000 Å for Flame Spectra, and From 2100-6700 Å for Arc and Spark Spectra) Moscow, Gosgeoltekhizdat, 1958. 119 p. 7,000 copies printed.

For geochemists, metallurgists, and others who use methods of spectrum analysis in their respective fields. 5p.

BR-SOV/1615
Kireyeva, Anna Ivanovna, Vera Filippovna Pereskokova, and Georgiy Pavlovich Spiridonov
METALLOTKACHESTVO (Weaving of Wire Cloth) Moscow, Gosenergoizdat, 1957. 142 p.

A manual for technical schools wire cloth weavers, foremen and process engineers. 4p.

BR-SOV/1623
Kuzmak, Yevsey Markovich
OSNOVY TEKHNOLOGII NEFTYANOGO APPARATOSTROYENIYA (Basic Principles of Petroleum Equipment Engineering) 2nd ed., rev. and enl. Moscow, Gostoptekhizdat, 1958. 419 p. 4,100 copies printed.

A survey of the principles applied to the manufacture of various petroleum equipment and apparatus built of metal sheets and tubes. 7p.

BR-SOV/1626
Ananov, Iosif Nikolayevich
RAZVITIYE ORGANIZATSIONNYKH FORM UPRAVLENIYA GOSUDARSTVENNOY PROMYSHLENNOST'YU V SSSR (Development of Organizational Aspects in the Management of State-owned Industries in the USSR) Moscow, Gosyurizdat, 1958. 79 p. 13,000 copies printed.

A brief historical review. 1p.

BR-SOV/1627
Vsesoyuznaya akusticheskaya konferentsiya. 4th, Moscow, 1958
REFERATY DOKLADOV (Abstracts of Reports at

the Fourth All-Union Acoustical Conference) Pt. 2. Moscow, Akad. nauk SSSR, 1958. 44 p. Number of copies printed not given.

Covering propagation of sound in nonhomogeneous media, nonlinear acoustics, ultrasonics, acoustic measurements, electroacoustics, and architectural and structural acoustics. 5p.

BR-SOV/1636
NOVYYE MASHINY; SBORNIK STATEY O NOVYKH MASHINAKH, MOTORAKH, APPARATAKH SOZDANNYKH NA KHAR'KOVSKIKH PREDPRIYATIYAKH V PERIOD 1956-1958 GG. (New Machines; Collection of Articles on New Machines, Motors, and Apparatus Made in Khar'kov Plants From 1956 to 1958) /Khar'kov/ Khar'kovskoye oblastnoye izd-vo, 1958. 226 p. 4,000 copies printed.

A collection of articles to acquaint the reader with the latest developments and attainments of the Khar'kov machinery manufacturing industry during the 1956-58 period. 3p.

BR-SOV/1638
Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut
GEOLOGICHESKOYE STROYENIYE I PERSPEKTIVY NEFTEGAZONOSNOSTI ZAPADNO-SIBIRSKOY NIZMENNOSTI (Geological Structure and the Oil- and Gas-bearing Possibilities of the West Siberian Plain) Moscow, Gosgeoltekhizdat, 1958. 390 p. (Series: Its: Trudy) 3,000 copies printed.

For petroleum geologists and economic planners in the oil and gas industry. 6p.

BR-SOV/1640
Shifrina, V. S., and N. N. Samosatskiy
POLIETILEN VYSOKOGO DAVLENIYA; SPRAVOCHNOYE RUKOVODSTVO (High-pressure Polyethylene; a Manual) 2d ed., enl. Leningrad, Goskhimizdat, 1958. 89 p. (Series: Novyye Plasticheskiye massy) 10,000 copies printed.

Basic information on the production, properties, processing, and fields of application of polyethylene. 2p.

BR-SOV/1641
Sharov, Vladimir Semenovich
ELEKTROMAGNITNYYE MUFTY SKOL'ZHENIYA (Electromagnetic Slip Couplings) Moscow, Gosenergoizdat, 1958. 102 p. 9,000 copies printed.

An explanation of the basic problems in the theory of electromagnetic slip couplings and design methods. 3p.

BR-SOV/1648
Nemkova, O. G., Ye. I. Burova, O. I. Vorob'yeva, Ye. A. Ippolitova, and A. V. Lapitskiy
RUKOVODSTVO K PRAKTICHESKIM ZANYATIYAM PO NEORGANICHESKOY KHIMII (Handbook for Laboratory Work in Inorganic Chemistry) [Moscow] Izd-vo Mosk. univ., 1959. 299 p. 15,000 copies printed.

Deals with the most important aspects of general and inorganic chemistry. 3p.

BR-SOV/1652
Komarovskiy, Aleksandr Nikolayevich
STROITEL'NYYE KONSTRUKTSII YADERNYKH REAKTOROV (Structural Designs of Nuclear Reactor Plants) Moscow, Atomizdat, 1958. 160 p. 5,600 copies printed.

The results of experience with designing the structural portion of various types of nuclear reactors in the USSR and abroad. 3p.

BR-SOV/1661
Sgibnev, Vladimir Fedorovich
KUZNECHNO-SHTAMPOVOCHNOYE PROIZVODSTVO; ZADACHI I UPRAZHENIYA (Forging and Stamping, Problems and Exercises) Moscow, Mashgiz, 1958. 150 p. 10,000 copies printed.

A textbood for machine-building tekhnikums and students specializing in forging and stamping. 3p.

BR-SOV/1667
Sakharov, Petr Vasil'yevich
TEKHNOLOGIYA ELEKTRO-APPARATOSTROYENIYA ELEKTROIZOLYATSIONNYKH I KORPUSNYKH DETALEY, OBOLOCHEK, REZERVUAROV I DETALEY MEKHANIZMOV, POKRYTIYA, SBORKA (Methods of Electric Apparatus Manufacture, pt. 2: Technology of Electric Insulating, Base Parts, Covers, Containers, Machine Parts, Coating, and Assembling) 2nd ed., rev. Moscow, Gosenergoizdat, 1957. 408 p. 10,000 copies printed.

A description of the fundamentals of electrical apparatus construction and the processes of parts manufacture and assembly. 6p.

BR-SOV/1671
Uzhik, Georgiy Viktorovich
PROCHNOST' METALLOV V MASHINOSTROYENII (Strength of Metals in Machine Building) Moscow, Trudrezervizdat, 1958. 73 p. (Series: Novaya tekhnika i peredovyye metody truda) 10,000 copies printed.

A popular presentation of the fundamentals of strength of metals as applied in machine building. 2p.

BR-SOV/1676
Lur'ye, Arkadiy Gertsevich
TEORIYA FERROREZONANSNYKH STABILIZATOROV NAPRYAZHENIYA (Theory of

Ferroresonant Voltage Regulators) Moscow, Gosenergoizdat, 1958. 129 p. 11,000 copies printed.

An explanation of theory, methods of designing, and applications. 3p.

BR-SOV/1680
Savost'yanov, Dmitriy Dmitriyevich
KONSTRUKTSIYA I REMONT VYCHISLITEL'NYKH MASHIN (MODELI KEV, KEL, LELR, SAL, SASL) (Design and Repair of Calculating Machines (Models KEV, KEL, KELR, SAL, SASL) 2nd ed., rev. and enl. Moscow, Gosstatizdat, 1957. 223 p. 8,500 copies printed.

An aid to mechanics and operators responsible for the technical maintenance of the computers and for the independent study of these computers by mechanics who are familiar with other computer systems. 4p.

BR-SOV/1682
Konyukhov, Sergey Mikhaylovich, and Ruf'fal'kovna Gektina
VYSOKOPROIZVODITEL'NYY SLESARNO-SBORCHNYY INSTRUMENT (High-capacity Tools for Fitters) Moscow, Mashgiz, 1958. 135 p. (Series: Biblioteka slesarya-sborshchika, vyp. 4) 10,000 copies printed.

Information describing the latest achievements in the field of machine tool assembling. 2p.

BR-SOV/1688
Gladkov, B. A., V. N. Alekseyev, A. N. Totskiy, V. A. Kudinov, and G. M. Azarevich
MODERNIZATSIYA UNIVERSAL'NYKH SVERLIL'NYKH STANKOV; RUKOVODYASHCHIYE MATERIALY (Modernization of Universal Drilling Machines; Instructions) Moscow, Mashgiz, 1958. 214 p. 5,000 copies printed.

A description of modern universal drilling machines and machines of obsolete design which predominate in the operating stock. 2p

BR-SOV/1689
Gradusov, N. M., L. O. Likht, E. I. Kalinkina, and V. A. Kudinov
MODERNIZATSIYA TOKARNYKH MNOGOSHPINDEL'NYKH AVTOMATOV I POLUAVTOMATOV; RUKOVODYASHCHIYE MATERIALY (Modernization of Automatic and Semiautomatic Multi-spindle Lathes; Instructions) Moscow, Mashgiz, 1958. 118 p. 6,500 copies printed.

A discussion of various devices which broaden the operating potential of automatic lathes and the problem of increasing their rigidity and vibration resistance. 2p.

BR-SOV/1697
Vladislavlev, Vladimir Sergeyevich
RAZRUSHENIYE POROD PRI BURENII SKVAZHIN (Breaking Rocks in Well Drilling) Moscow, Gostoptekhizdat, 1958. 238 p. 3,000 copies printed.

A detailed analysis of the "rock bit-drilling pipe stem-drive" system. 3p.

BR-SOV/1698
Biltz, Wilhelm
AUSFUHRUNG QUALITATIVER ANALYSEN ANORGANISCHER STOFFE (Qualitative Analysis of Inorganic Substances) 13th, rev. ed. Leipzig, Akademische Verlagsgesellschaft, Geest und Portig, 1957. 189 p. Number of copies printed not given.

A laboratory manual for university and technical school students of the German Democratic Republic. 4p.

BR-SOV/1701
Rybkin, Aleksandr Pavlovich
NOVAYA TEKHNOLOGIYA V MASHINOSTROYENII; OSNOVNYYE NAPRAVLENIYA V RAZVITII TEKHNOLOGII MASHINOSTROYENIYA (New Technology in Machine Building; Basic Trends in the Development of the Technology of Machine Building) Moscow, Izd-vo "Znaniye," 1958. 51 p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Ser. 4, 1958, nos. 6/7) 46,5000 copies printed.

Designed to aquaint the general reader with the advanced manufacturing processes used in the machine-building industry and trends in production automation. 2p.

BR-SOV/1706
Kulebakin, Viktor Sergeyevich, and Valentin Dmitriyevich Nagorskiy
ELEKTROPRIVOD SAMOLETNYKH AGREGATOV I MEKHANIZMOV (Electric Actuator of Aircraft Components and Mechanisms) Moscow, Oborongiz, 1958. 388 p. (Series: Elektrifikatsiya samoletov) 10,000 copies printed.

A systematic treatment of the principles of operation and the design features of electric actuators used in aircraft control functions. 6p.

BR-SOV/1707
Akademiya nauk SSSR. Matematicheskiy institut
PROBLEMY KONSTRUKTIVNOGO NAPRAVLENIYA V MATEMATIKE; SBORNIK RABOT, VYP. 1 (Problems Connected With the Construction Trend in Mathematics; Collection of Articles, Nr 1) Moscoe, Izd-vo AN SSSR, 1958. 348 p. (Series: Its: Trudy, t. 52). 2,500 copies printed.

Works presented at the seminar on mathematical logic of the Leningrad Branch of the Mathematical

Institute imeni V. A. Steklov of the Academy of Sciences, USSR. 3p.

BR-SOV/1710
Poltev, Vladimir Kirillovich, and Lev Petrovich Smol'nikov
ELEKTROOBORUDOVANIYE OSNOVNYKH TSEKHOV METALLURGICHESKIKH ZAVODOV (Electric Equipment of the Principal Shops of Metallurgical Plants) 2nd ed., rev. and enl. Sverdlovsk, Metallurgizdat, 1957. 519 p. 14,000 copies printed.

The theory, operating principles, and construction details of electric machines and apparatus of electric drives in metallurgical plants. 7p.

BR-SOV/1712
Moscow. Publichnaya biblioteka
ISKUSSTVENNYYE SPUTNIKI ZEMLI. MEZHPLANETNYYE POLETY. REKOMENDATEL'NYY UKAZATEL' LITERATURY (Artificial Earth Satellites. Interplanetary Flight. Recommended-reading List) Moscow, 1958. 45 p. 26,000 copies printed.

For the general reader interested in artificial earth satellites and space flight. 2p.

BR-SOV/1716
Vsesoyuznyy institu "Gidroenergoproyekt." Leningradskoye otdeleniye
TURBINNOYE OBORUDOVANIYE GIDROELEKTROSTANTSIY; RUKOVODSTVO DLYA PROYEKTIROVANIYA (Trubine Installations of Hydroelectric Power Stations; Design Manual) 2nd ed., rev. and enl. Moscow, Gosenergoizdat, 1958. 519 p. 6. 200 copies printed.

A manual for engineers and technicians engaged in the design of hydroelectric power plant equipment, and students of power and power machine-building institutes. 7p.

BR-SOV/1717
Alekseyev, Aleksandr Yemel'yanovich
KONSTRUKTSIYA ELEKTRICHESKIKH MASHIN (Design of Electric Machines) Moscow, Gosenergoizdat, 1958. 426 p. 25,000 copies printed.

For students of electrotechnical and power vuzes also of interest to electrical engineers dealing with the design and operation of electrical machines. 10p.

BR-SOV/1728
Akademiya nauk SSSR. Institut metallurgii
SOVREMENNYYE PROBLEMY METALLURGII (Modern Problems in Metallurgy) Moscow, Izd-vo AN SSSR, 1958. 640 p. 3,000 copies printed.

A collection of articles on certain aspects of Soviet metallurgy. 6p.

BR-SOV/1730
Bibishev, Aleksey Valil'yevich, and Zinoviy Yakovlevich Rabinovich
ELEKTROOBORUDOVANIYE GAZOVYKH DVIGATELEY (Electric Equipment of Gas Engines) Moscow, Mashgiz, 1958. 173 p. 5,000 copies printed.

A manual for engineers, technicians, and mechanics handling or overhauling gas engines. 3p.

BR-SOV/1736
Dvořák, Josef
USOVERSHENSTVOVANIYA V OBLASTI KHOLODNOY OBRABOTKI METALLOV. PEREVOD S CHESHSKOGO (Improvements in Metal Cold Working; Translated From the Czech) Moscow Profizdat, 1956. 207 p. (Series: Iz opyta novatorov stran narodnoy demokratii) 9,000 copies printed.

For efficiency innovators, technicians, and workers in machine-building plants. 2p.

BR-SOV/1739
USSR. Vsesoyuznyy komitet standartov
UKAZATEL' GOSUDARSTVENNYKH STANDARTOV, 1955 G.; DOPOLNENIYE (Index of State Standards, 1955, Supplement) Official ed. Moscow, Standartgiz, 1956. 128 p. 10,000 copies printed.

This official Soviet publication contains the revised and changed State Standards for industry for the year 1955. 5p.

BR-SOV/1741
Geronimus, Yakov Lazarevich
DINAMICHESKIY SINTEZ MEKHANIZMOV PO METODU CHEBYSHEVA (Dynamic Synthesis of Mechanisms According to Chebyshev Method) Khar'kov, Izd-vo Khar'kovskogo univ., 1958. 133 p. 3,000 copies printed.

The problem of the dynamic synthesis of mechanisms according to Chebyshev's method and the development and application of this method by Soviet mathematicians. 3p.

BR-SOV/1745
Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Kiyevskoye oblastnoye upravleniye
PEREDOVAYA TEKHNOLOGIYA LITEYNOGO PROIZVODSTVA (Advanced Technology of Casting Production) Kiyev, Mashgiz, 1958. 152 p. 6,000 copies printed.

A collection of articles and papers of advanced methods of production and mechanization of the foundry industry. 3p.

BR-SOV/1746
Tukh, I. I.
PROIZVODSTVO LISTOVOGO STEKLA METODOM VERTIKAL'NOGO VYTYAGIVANIYA (Manufacturing Sheet-Glass Using the Vertical Drawing Method) Moscow, Gosstroyizdat, 1958. 226 p. 2,000 copies printed.

A description of the equipment and principal glass-producing methods used in the Soviet Union based primarily on techniques developed by the author. 4p.

BR-CZECH/1747
Vrba, Jan
MĚŘENÍ NA CENTIMETROVÝCH VLNÁCH, I: MĚŘICÍ PŘÍSTROJE A ZÁKLADNÍ MĚŘENÍ. (Microwave Measurements. Vol 1: Measuring Instruments and Basic Measurements) Prague, SNTL, 1958. 407 p. 2,200 copies printed.

The construction, design, and testing of microwave measuring instruments, and methods and technique of measurement. 3p.

BR-SOV/1752
Plotnikov, Ivan Mikhaylovich, Valer'yan Nikitich Razumov, Valentina Ivanovna Oborina, Murshida Salimovna Razumova, Nikolay Vladimirovich Kuznetsov, and Aleksey Nikiforovich Koryakov
POTOCHNOYE IZGOTOVLENIYE OBOLOCHKOVYKH FORM (Assembly Line Manufacture of Shell Molds) Moscow, Mashgiz, 1957. 42 p. (Series: Obmen tekhnicheskim opytom) 4,000 copies printed.

Reports on experience gained by the mixed crews of the Uralkhimmashzavod (Ural Chemical Machinery Plant) and the Sverdlovsk branch of the NII-KhIMMASh (Scientific Research Institute of Chemical Machinery). 2p.

BR-SOV/1753
Parygina, Natal'ya Diomidovna
NOVOTUL'SKIY METALLURGICHESKIY...; IZ ISTORII ZAVODA (Novotul'skiy Metallurgical Plant; a History of the Plant) /Tula/ Tul'skoye knizhnoye izd-vo, 1957. 53 p. 4,000 copies printed.

A booklet to acquaint the general reader with the history and development of the Novotul'skiy Metallurgical Plant. 2p.

BR-SOV/1755
Fomin, Kirill Alekseyevich
SKOROSTNOYE NAREZANIYE REZ'B NA TOKARNO-VINTOREZNOM STANKE S PRIMENENIYEM REZ'BOUKAZATELYA (High-speed Threading With Turning Lathe Using Thread Chasing Dial) Kuybyshev/ Kuybyshevskoye knizhnoye izd-vo, 1956. 24 p. (Series: Novoye v tekhnike) 3,000 copies printed.

A new high-speed thread-cutting technique. 1p.

BR-SOV/1759
Shestopalov, Leonid Mikhaylovich
DEFORMIROVANIYE METALLOV I VOLNY PLASTICHNOSTI V NIKH (Metal Deformation and Waves of Plasticity) Moscow, Izd-vo AN SSSR, 1958. 267 p. 3,000 copies printed.

A consideration of the mechanical characteristics of metals as related to the duration, velocity of loading, and temperatures. 2p.

BR-SOV/1760
Tarayan, Vergine Makarovna
MERKUROREDUKTOMETRIYA; MERKUROMETRIYA KAK REDUKTOMETRICHESKIY METOD OB"YEMNOGO ANALIZA (Use of Mercury as a Titrimetric Reducing Agent; Mercury Reduction in Volumetric Analysis) Yerevan, Izd-vo Yerevanskogo univ-ta, 1958. 191 p. 1,000 copies printed.

Literary data and theoretical considerations on the results of studies dealing with the properties of mercury ions. 4p.

BR-SOV/1762
Lavrukhina, Avgusta Konstantinovna, and Yuriy Alexsandrovich Zolotov
TRANSURANOVYYE ELEMENTY (Transuranium Elements) Moscow, Izd-vo AN SSSR, 1958. 125 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 10,000 copies printed.

A description of the transuranium elements, mainly the two most important ones - plutonium and neptunium, and how they were added to the Periodic System. 2p.

BR-SOV/1766
Nagiyev, Murtuza Fatullayevich
UCHENIYE O RETSIRKUL YATSIONNYKH PROTSESSAKH V KHIMICHESKOY TEKHNOLOGII (The Science of Recycling Processes in Chemical Technology) Moscow, Izd-vo AN SSSR, 1958. 243 p. 8,000 copies printed.

Theoretical and experimental data compiled by the author intended to help solve general and fundamental problems in chemical technology. 5p.

BR-SOV/1768
Vafiadi, V. G., and N. M. Nesterova
ALEKSANDR ALEKSEYEVICH LEBEDEV Moscow, Izd-vo AN SSSR 1957. 25 p. (Series: Materialy k biobiliografii uchenykh SSSR. Seriya fiziki, vyp. 8) 2,000 copies printed.

A bio-bibliographical sketch of the life and works of the Soviet scientist Aleksandr Alekseyevich Lebedev. 2p.

BR-SOV/1769
Gervids, Ivan Avgustovich
KERAMZIT; ISSLEDOVANIYA PO TEKHNOLOGII ("Keramzit" [a synthetic fine building material, a porous clay filler for cement]; Research and Technology) Moscow, Gosstroyizdat, 1957. 74 p. (Series: Nauchnoye soobshcheniye) 2,500 copies printed.

The pamphlet summarizes and evaluates the results of design and experiment with the use of "Keramzit". 3p.

BR-SOV/1772
Akademiya nauk SSSR. Komitet po geodezii i geofizike
SOOBSHCHENIYE O NAUCHNYKH RABOTAKH PO VULKANOLOGII; PREDSTAVLYAETSYA V MEZHDUNARODNUYU ASSOTSIATSIYU VULKANOLOGII K XI GENERAL'NOY ASSAMBLEYE MEZHDUNARODNOGO GEODEZICHEKOGO I GEOFIZICHESKOGO SOYUZA. (Report on Scientific Works on Volcanology; Presented to the International Association of Volcanology at the 11th General Assembly of the International Union of Geodesy and Geophysics) Moscow, Izd-vo AN SSSR, 1957. 20p.

A bibliographic guide to studies in volcanology in the USSR. 1p.

BR-SOV/1773
Betekhtin, Anatoliy Georgiyevich, Aleksandr Dmitriyevich Genkin, Anna Aleksandrovna Filimonova, and Tat'yana Nikolayevna Shadlun
TEKSTURY I STRUKTURY RUD (Texture and Structure of Ore Minerals) Moscow, Gosgeoltekhizdat, 1958. 434 p. 12,000 copies printed.

The structural-textural conditions in ore deposition leading to the formation of minerals. 5p.

BR-SOV/1774
Vaynberg, David Veniaminovich, and Georgiy Stepanovich Pisarenko
MEKHANICHESKIYE KOLEBANIYA I IKH ROL' V TEKHNIKE (Mechanical Vibrations and Their Role in Engineering) Moscow, Fizmatgiz, 1958. 231 p. 12,000 copies printed.

Various types of mechanical vibrations and their damaging effects and useful applications in various branches of engineering. 3p.

BR-SOV/1775
Vakhler, Boris L'vovich
NASOSY I NASOSNYYE STANTSII METALLURGICHESKIKH PREDPRIYATIY (Pumps and Pumping Stations of Metallurgical Plants) Moscow, Metallurgizdat, 1958. 255 p. Errata slip inserted. 7,500 copies printed.

Presents methods of selecting pumps, and arrangement of pumping equipment, electric power supply, automation and operation of pumping stations. 4p.

BR-SOV/1781
Akademiya nauk SSSR. Institut geografii.
VOPROSY FIZICHESKOY GEOGRAFII (Problems in Physical Geography) Moscow, Izd-vo AN SSSR, 1958. 370 p. Errata slip inserted. 1,500 copies printed.

Problems in physical geography pertaining to the northern regions of the USSR and particularly those of Yakutia. 2p.

BR-SOV/1785
Akademiya nauk SSSR. Institut nauchnoy informatsii
KHIMIYA NEFTI I GAZA (Chemistry of Petroleum and Gas) Moscow, Izd-vo AN SSSR, 1958. 477 p. (Series: Itogi nauki; khimicheskiye nauki, 2) Errata slip inserted. 3,000 copies printed.

The first volume of the series devoted to the progress made in petroleum and gas chemistry. 3p.

BR-SOV/1787
Landau, Lev Davydovich, and Yevgeniy Mikhaylovich Lifshits
MEKHANIKA (Mechanics) Moscow, Fizmatgiz, 1958. 206 p. (Series: Teoreticheskaya fizika, t. 1) 35,000 copies printed.

Equations of motion and their integration, impact of particles, vibrations about a position of stable equilibrium, motion of a rigid body, and canonical equations. 3p.

BR-SOV/1791
Bermant, Anisim Fedorovich
KURS MATEMATICHESKOGO ANALIZA (Course of Mathematical Analysis) Pt. 1. 10th ed., unrev. Moscow, Gosteknizdat, 1957. 466 p. 75,000 copies printed.

The standard subject matter of mathematical analysis. 7p.

BR-SOV/1793
Vorontsov-Vel'yaminov, Boris Aleksandrovich
PROISKHOZHDENIYE NEBESNYKH TEL (Origin of Celestial Bodies) Moscow, Voyen. izd-vo M-va obor. SSSR, 1958. 128 p. (Series: Nauchno-popul-yarnaya biblioteka) Number of copies printed not given.

A popular science type booklet discusses various theories on the origin of the Universe. 2p.

BR-SOV/1794
Shunayev, Boris Konstantinovich
ZUBOFREZEROVANIYE METODOM DVUKH PODACH (Gear Hobbing by Two-feed Method)

Moscow, Mashgiz, 1958. 48 p. (Series: Obmen tekhnicheskim opytom) Errata slip inserted. 5,000 copies printed.

A method of gear hobbing where the hob has an additional feed in the direction of its longitudinal axis. 2p.

BR-SOV/1806
Ventskevich, Georgiy Zenonovich
AGROMETEOROLOGIYA (Agricultural meteorology) Leningrad, Gidrometeoizdat, 1958. 375 p. Errata slip inserted. 5,000 copies printed.

A discussion of climatic features as they affect a particular field of crops, the significance of the various weather factors in agricultural production, the effect of the moisture exchange in soil, and the moisture reserves on cultivated plants. 4p.

BR-SOV/1817
Yavorskiy, Boris Mikhaylovich, Andrey Antonovich Detlaf, Lidiya Bronislavovna Milkovskaya, and Georgiy Petrovich Sergeyev
KURS LEKTSIY PO FIZIKE, T. 1: MEKHANIKA, MOLEKULYARNAYA FIZIKA I TERMODINAMIKI (A Course of Lectures on Physics, Vol 1: Mechanics, Molecular Physics, and Thermodynamics) Moscow, Gos. izd-vo "Sovetskaya nauka," 1958. 276 p. 30,000 copies printed.

A correspondence course in basic physics for engineering students. 4p.

BR-SOV/1819
Zanina, Anastasiya Andreyevna
DAL'NEVOSTOCHNYYE RAYONY, KAMCHATKA I SAKHALIN (Far East Regions: Kamchatka and Sakhalin) Leningrad, Gidrometeor. izd-vo, 1958. 166 p. (Series: Klimat SSSR, vyp. 6) Errata slip inserted 1,200 copies printed.

Characteristics of the basic climate-forming factors (the peculiarities of the radiation budget, the circulation processes, the effect of relief and sea). 3p.

BR-SOV/1831
USSR. Glavnoye upravleniye gidrometeorologicheskoy sluzhby
RASPISANIYE I OB"YEMY TSIRKULYARNYKH RADIOPEREDACH METEOROLOGICHESKIKH SVEDENIY PO TERRITORII SSSR (Schedule and Volume of Circular Radio Transmissions of Meteorological Information Throughout the USSR) Leningrad, Gidrometeoizdat, 1956. 114 p. 2,250 copies printed.

A guide to the broadcasting of meteorological information. 1p.

BR-SOV/1833
Zalukayev, Leonid Petrovich
SINTEZ I REAKTSII AL'FA-NITROKETONOV (Synthesis and Reactions of Alpha-Nitroketones) Riga, Izd-vo AN Latviyskoy SSR, 1958. 181 p. Errata slip inserted. 1,000 copies printed.

The present monograph covers the nitration of organic compounds which include an active methylene group, and mainly, the nitration of alkyl and aryl derivatives of 1, 3-indandione. 2p.

BR-SOV/1834
Shershen', Aleksandr Ignat'yevich
AEROFOTOS"YEMKA (Aerial Photography) Moscow, Geodezizdat, 1958. 334 p. Errata slip inserted. 5,000 copies printed.

A detailed course in all aspects of aerial photography as related to topographic mapping. 6p.

BR-SOV/1835
Akademiya nauk SSSR. Laboratoriya aerometodov
TRUDY, T. 6 (Transactions of the Laboratory of Aerial Methods, USSR Academy of Sciences, Vol 6) Moscow, Izd-vo AN SSSR, 1958. 280 p. Errata slip inserted. 1,500 copies printed.

Problems in aerial photography and photo interpretation in relation to geological phenomena. 3p.

BR-SOV/1836
Akademiya nauk Kazakhskoy SSR. Sektor astrobotaniki
TRUDY, T. 5 (Transactions of the Astrobotanical Sector, Kazakh SSR. Academy of Sciences, Vol 5) Alma-Ata, Izd-vo AN Kazakhskoy SSR, 1957. 1,100 copies printed.

Spectrophotometry as a means for determining the absorption of light by plants. 2p.

BR-SOV/1837
Akademiya nauk SSSR. Institut fiziki atmosfery
RABOTY PO DINAMICHESKOY METEOROLOGII (Works on Dynamic Meteorology) Moscow, Izd-vo AN SSSR, 1958. 186 p. (Series: Its: Trudy, vyp. 2) 1,500 copies printed.

The results of studies in dynamic meteorology carried out from 1951-1954. 2p.

BR-SOV/1840
Vsesoyuznoye astronomo-geodezicheskoye obshchestvo
ASTRONOMICHESKIY KALENDAR; YEZHEGODNIK. PEREMENNAYA CHAST'; 1959 (Astronomical Calendar; Yearbook. Variable Part; 1959) Moscow, Fizmatgiz, 1958. 370 p. 8,500 copies printed.

Astronomical calendar is intended for specialists in astronomy, astrophysics, and geophysics. 5p.

BR-HUN/1850
Egyed, László
GEOFIZIKAI ALAPISMERETEK (Principles of Geophysics) Budapest, Tankönyvkiadó, 1955. 535 p. (Series: Egyetemi tankönyv) 1,500 copies printed.

A textbook for geology students, and a handbook on geophysics. 11p.

BR-SOV/1872
Shchelokov, N.
PROMYSHLENNOST' MOLDAVSKOY SSR (Industry of the Moldavian SSR) Kishinev, Gos. izd-vo Moldavii, 1957. 113 p. 3,000 copies printed.

For the general reader interested in the industrial growth of the Moldavian SSR. 2p.

BR-SOV/1875
SOVETSKIYE UCHENYYE OB OPASNOSTI ISPYTANIY YADERNOGO ORUZHIYA (Soviet Scientists on the Danger of Nuclear Weapon Tests) Moscow, Atomizdat, 1959. 116 p. 25,800 copies printed.

For biologists and other scientists who are interested in the problem of radioactive fallout. 2p.

BR-SOV/1880
Leningrad. Glavnaya geofizicheskaya observatoriya
MIKROKLIMAT SEVERNOY CHASTI KAZAKHSKOGO MELKOSOPOCHNIKA (Microclimate of the Northern Part of the Kazakh Hummocky Region) Leningrad, Gidrometeoizdat, 1958. 207 p. Errata slip inserted. 800 copies printed.

A climatic description of the Kazakh "Melkosopochnik" (hummocky region). 4p.

BR-SOV/1881
Akademiya nuak Kazakhskoy SSSR. Sektor astrobotaniki
TRUDY, T. 6 (Transactions of the Astrobotanical Sector, Kazakh SSR. Academy of Sciences, Vol 6) Alma-Ata, Izd-vo AN Kazakhskoy SSR, 1958. 207 p. Errata slip inserted. 1,300 copies printed.

The results from observations of the planet Mars made during its most favorable opposition in 1956. 2p.

BR-SOV/1885
Akademiya nauk SSSR. Mezhduvedomstvennaya postoyannaya komissiya po zhelezu
MAGNETITOVYYE RUDY KUSTANAYSKOY OBLASTI I PUTI IKH ISPOL'ZOVANIYA (Magnetite Iron Ores of the Kustanayskaya Oblast' and Ways to Exploit Them) Moscow, Izd-vo AN SSSR, 1958. 489 p. (Series: Zhelezorudnyye mestorozhdeniya SSSR) 3,000 copies printed.

The structural and mining geology of the magnetite deposits of the Kustanayskaya oblast'. 4p.

BR-SOV/1886
Ob"yedinennaya nauchnaya sessiya po metallogenicheskim i prognoznym kartam, Alma-Ata, 1958.
MATERIALY NAUCHNOY SESSII PO METALLOGENICHESKIM I PROGNOZNYM KARTAM; DOKLADY. (Materials Presented at the Scientific Session on Metallogenetic and Postulated Ore Occurrence Maps; Reports) Alma-Ata, Izd-vo AN Kazakhskoy SSR, 1958. 318 p. Errata slip inserted. 3,850 copies printed.

For exploration geologists, mining engineers, and cartographers. 3p.

BR-SOV/1897
Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy geologorazvedochnyy institut.
O PROISKHOZHDENIY NEFTI V KAMENNOUGOL'NYKH I PERMSKIKH OTLOZHENIYAKH VOLGO-URAL'SKOY OBLASTI; SBORNIK STATEY (Origin of Petroleum in the Carboniferrous and Permian Sediments of the Volga-Ural District; Collection of Articles) Leningrad, Gostoptekhizdat, 1958. 283 p. (Series: Its: Trudy, vyp. 117) Errata slip inserted. 1,500 copies printed.

The Carboniferrous and Permian sediments of the Volga-Ural district and methods of determining possible petroleum source-beds. 2p.

BR-SOV/1910
Akademiya nauk SSSR. Dal'nevostochnyy filial, Vladivostok. Institut geografii
MATERIALY PO FIZICHESKOY GEOGRAFII YUGA DAL'NEGO VOSTOKA; PRIKHANKAYSKAYA RAVNINA I PRILEGAYUSHCHIYE K NEY RAYONY PRIMORSKOGO KRAYA (Physical Geography of the Southern [Soviet] Far East; Khanka Plain and Adjacent Areas of the Primorskiy Kray) Moscow, Izd-vo AN SSSR, 1958, 299 p. 1,300 copies printed.

A paleogeographic study of the Ussuri valley and a general treatment of the hydrography and climate of the Prikhankayskaya (Khankay) plain. 2p.

BR-HUN/1911
International Conference on Cosmic Radiation. Budapest, 1956.
INTERNATIONAL CONFERENCE ON COSMIC RADIATION ORGANIZED BY THE HUNGARIAN ACADEMY OF SCIENCES. Budapest, 1957. 187 p. 200 copies printed.

Papers read at the six plenary sessions of the conference. 3p.

BR-SOV/1923

Akademiya nauk SSSR. Otdeleniye geologo-geograficheskikh nauk. Komissiya po probleme "Zakonomernosti razmeshcheniya poleznykh iskopayemykh."

ZAKONOMERNOSTI RAZMESHCHENIYA POLEZNYKH ISKOPAYEMYKH (Regularities in the Distribution of Mineral Deposits Vol 1. Moscow, Izd-vo AN SSSR, 1958. 532 p. Errata slip inserted. 2,500 copies printed.

For geologists and petrographers, particularly those interested in the worldwide distribution of minerals and the reasons underlying their occurrence. 3p.

BR-SOV/1929

Zabelin, Igor' Mikhaylovich

ASTROGEOGRAFIYA; YEYE PREDMET I ZADACHI (Astronomical Geography; Subjects and Problems) Moscow, Geografizdat, 1958. 61 p. 20,000 copies printed.

Acquaints the reader with the content and scope of a new branch of the earth sciences - astrogeography. 2p.

BR-SOV/1934

Leningrad. Nauchno-issledovatel'skiy institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln

TRUDY, VYP. 13 (Transactions of the Institute of Scientific Research on Terrestrial Magnetism, the Ionosphere, and Radio Wave Propagation. Nr 13) Moscow, Gidrometeoizdat (Otd-nie), 1957. 118 p. 1,120 copies printed.

Articles on aspects of radio wave propagation. 2p.

BR-SOV/1938

Ayzenverg, David Yefemovich

STRATIGRAFIYA I PALEOGEOGRAFIYA NIZHNEGO KARBONA ZAPADNOGO SEKTORA BOL'SHOGO DONBASSA (Stratigraphy and Paleogeography of the Lower Carboniferous of the Western Sector of the Great Donets Basin) Kiev, Izd-vo AN USSR, 1958. 270 p. (Series: AN USSR. Institut geologicheskikh nauk. Trudy, seriya stratigrafii i paleontologii, vyp. 16) Errata slip inserted. 1,500 copies printed.

For geologists interested in the exploration and study of the Carboniferous sediments of the Greater Donets Basin. 3p.

BR-SOV/1940

Ovcharenko, Fedor Danilovich, Nikolay Grigor'yevich Kirichenko, Daniil Naumovich Kovalenko, and Aleksey Ignat'yevich Rastrenenko

UKRAINSKIYE BENTONITY; GEOLOGIYA, MINERALOGIYA, FIZIKO-KHIMIYA I PRIMENENIYE V NARODNOM KHOZYAYSTVE (Ukrainian Bentonites; Geology, Mineralogy, Physical Chemistry, and Industrial Applications) Kiev, Izd-vo AN Ukrainskoy SSR, 1958. 98 p. 3,000 copies printed. Errata slip inserted.

Results obtained from research work in the geology, mineralogy, physics, and chemistry of Ukrainian bentonite clays. 3p.

BR-SOV/1941

Volkov, K. I., and P. N. Zagibalov

TEKHNOLOGIYA SLYUDY. (Technology of Mica) Moscow, Gosstroyizdat, 1958. 243 p. 2,500 copies printed. Errata slip inserted.

The development of the mica industry in the Soviet Union. 4p.

BR-SOV/1945

Tsimlyanskaya gidrometeorologicheskaya observatoriya

SBORNIK RABOT... VYP. 1. (Collected Papers of the Tsimlyansk Hydrometeorological Observatory Nr. 1) Leningrad, Gidrometeoizdat, 1958. 159 p. 460 copies printed.

A study and exploitation of water reservoirs and large lakes. 2p.

BR-SOV/1948

Chernozhukov, Nikolay Ivanovich, Solomon Efraimovich Kreyn, and Boris Vital'yevich Losikov

KHIMIYA MINERAL'NYKH MASEL (Chemistry of Mineral Lubricating Oils) 2d ed., rev. Moscow, Gostoptekhizdat, 1959. 414 p. 4,000 copies printed.

Basic problems relating to the nature of lubricating oils, the changes in lubricating oils under operating conditions, and the technology involved under these conditions. 2p.

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VIOLATION OF THE BOGUSLAVSKI-LANGMUIR LAW DURING THE HEATING OF THE TUNGSTEN CATHODE OF A VACUUM TUBE BY A HIGH-SURGE PULSE.

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ON THE SURFACE ACTIVITY OF CHARCOAL.

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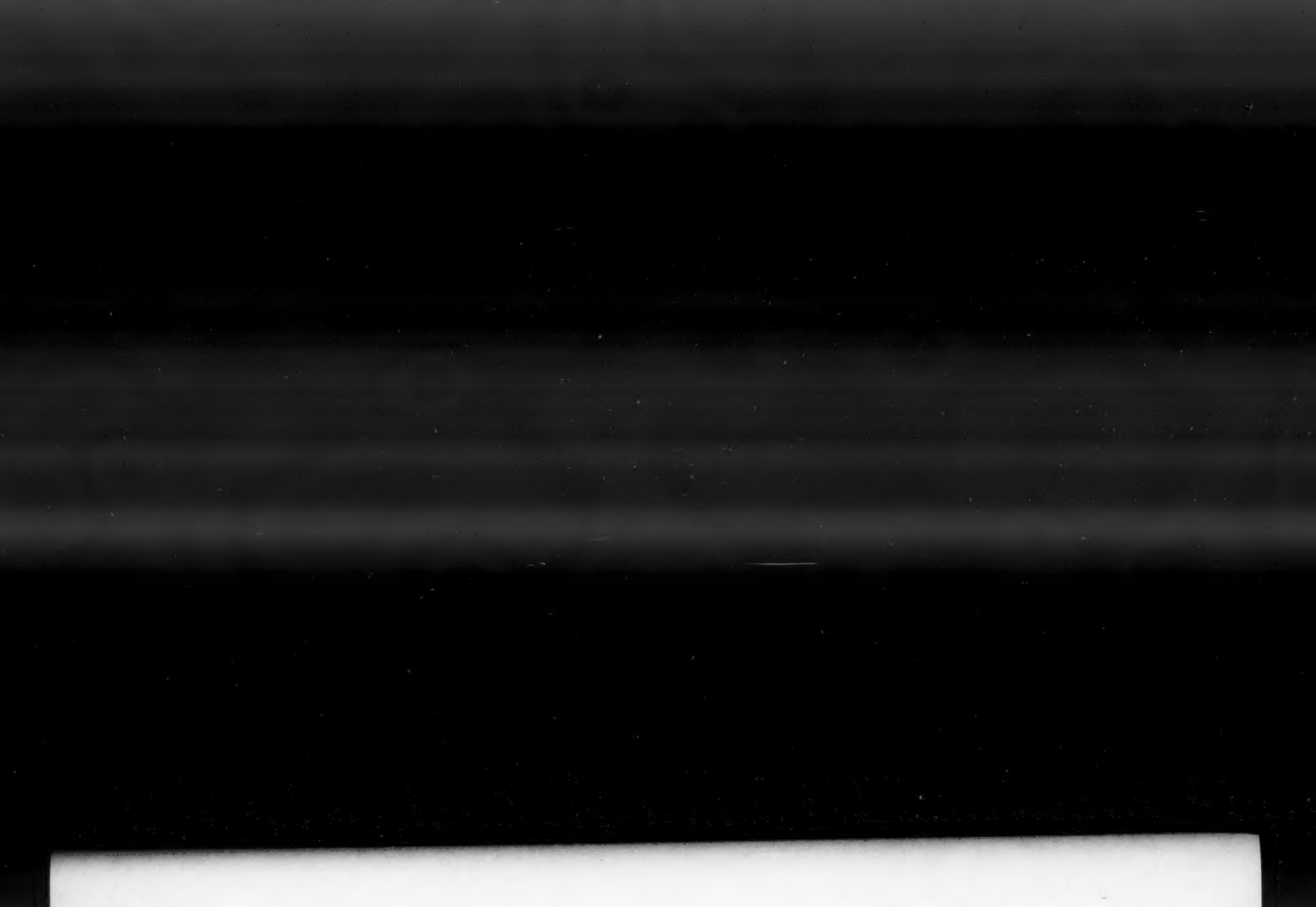

Au
Aaltio, I
Aberbuch
Abramov
(BR-S
Abrikosc
Abusalin
Acloque,
Adamov,
Albert, I
Alekperc
Alekseye
Alikhany
Al'tshule
Ameyam
Andreyev
Andriyev
Andronik
Andryanc
Andrzeje
Angenot,
Anner, C
Anufriye
Anzai, K
Apt. I.
Arapides
Arbuzov,
Arkhange
Arkhange
Armand,
Astapovic
(BR-S
Astrakha
Astreyev
Atlas, S.
Auwers,
Aver'yan
Ayata, A
Babikov,
(BR-S
Bagotskay
Bakanova
Bakhrakh
Bakhvalov
(BR-S
Balandin,
Balat, F.
Bal'yan,
(BR-S
Bandel, C
Baranov,
Baron, F
Barsky, C
Baskin, M
Basko, P.
Bass, F.
Baudisch,
Baumgart
Baur, R.
Bayer, O
Bayo, J.

AUTHOR INDEX

Author	Page
Aaltio, E.	358
Aberbuch, M.	301
Abramova, V. F. (BR-SOV/1460)	A-1
Abrikosov, A. A.	376
Abusalimov, N. S.	299
Acloque, P.	359
Adamov, A. N.	346
Albert, H. J.	364
Alekperov, Yu. G.	292
Alekseyev, E. M.	364
Alikhanyan, S. I.	300
Al'tshuler, L. V.	363
Ameyama, M.	300
Andreyeva, T. F.	296
Andriyevskaya, L. D.	309
Andronikashvili, E. L.	320
Andryanov, V. P.	292
Andrzejewski, S.	339
Angenot, P.	354
Anner, G.	317
Anufriyeva, E. V.	294
Anzai, K.	308
Apt. I.	355
Arapides, L.	316
Arbuzov, A. E.	312
Arkhangel'skaya, N. V.	307
Arkhangel'skaya, V. M.	328
Armand, M.	312
Astapovich, I. S. (BR-SOV/1955)	A-7
Astrakhantsev, S. M.	B-1
Astreyeva, O. M.	372
Atlas, S. M.	332
Auwers, K. v.	315
Aver'yanova, L. L.	306
Ayata, A.	318
Babikov, O. I. (BR-SOV/1767)	A-3
Bagotskaya, I. A.	319
Bakanova, A. A.	363
Bakhrakh, L. P.	350
Bakhvalov, G. T. (BR-SOV/1729)	A-3
Balandin, G. F.	B-1
Balat, F.	298
Bal'yan, S. V. (BR-SOV/1740)	A-3
Bandel, G.	336
Baranov, G. G.	346
Baron, F.	305
Barsky, G.	319
Baskin, M. L.	373
Basko, P. T.	360
Bass, F. G.	376
Baudisch, O.	319
Baumgartner, A.	294
Baur, R.	317
Bayer, O.	332
Bayo, J. B.	296
Bazant, V.	B-1
Becherer, G.	332
Behrendt, H.	357
Beinish, A. M.	355
Bekhli, A. F.	306
Bel'kov, N. F.	292
Belov, K. P.	371
Beloyusov, A. V.	344
Belyakov, M.	324
Belyayev, A. I.	B-5
Bengen, F.	315
Bennetot, M. de	371
Berent, Ya. K.	B-3
Beresnev, B. I.	360
Berezin, D. P.	B-1
Beritov, I. S.	295
Berlin, A. A.	B-1
Bernhard, K.	296
Berthoux, J.	312
Besnard, S.	365
Besstrashnov, V. K.	348
Bethe, H.	370
Bianchi, A.	307
Bichlbauer, U.	307
Bickel, M. H.	296
Biernacki, W.	356
Birfel'd, A. G.	348
Birman, I. B.	309
Biryulin, V.	329
Biryulin, V.	B-1
Bleshinskiy, S. V. (BR-SOV/1460)	A-1
Bogatyrev, Yu. M.	365
Bogdanova, V. V.	366
Bogolyubov, N. N.	360
	373
	375
Boichenko, M. S.	348
Bolotovskiy, B. M.	375
Bolviken, A.	358
Bonetti, E. M.	324
Borodulin, N. A.	292
Borozdin, P. I.	353
Borzkyka, A. M.	365
Bosdorf, L.	348
Bracksteck, H. J.	351
Braude, S. Ya.	376
Braukmann	343
Brener, Z.	301
Breydo, M. G.	348
Brillouin, J.	371
Brokhin, I. S.	354
Borchers, H.	367
Brosch, H.	348
Brossa, S. Q.	301
Brotzmann, K.	332
	334
Brovman, Ya. S.	346
Buchanan, G. H.	319
Buděšinsky, B.	312
Bühler, U.	296
Bulygin, V. Ya.	326
Burkhardt, A.	333
Busse, O.	301
Bykov, A.	B-1
Bystrov, T. A.	292
Casadio, S.	302
Cattan, R.	301
Cerny, V.	298
Chapnik, N. I.	B-1
Chechulin, B. B.	360
Ch'en, F. -y.	339
Chen-Rong, L.	297
Chen-Song, L.	297
Cherdyntsev, V. V.	326
Cherkas, K. V.	340
Chernukha, R.	B-2
Chernyak, G. S.	367
Chernyshev, V.	B-2
Chetverikov, S. S.	348
Chkhaidze, Sh. M.	294
Chkhaydze, Sh. M.	294
Colomb, P.	342
Combes, A.	315
Combes, C.	315
Corradini, P.	316
Costantinides, G.	356
Crépy, O.	296
Daniel'-Bek, V.	B-2
Daniélopolu, D.	302
Danusso, F.	333
Darnaud, C.	302
Davlianidze, V.	339
Davydov, A. S.	373
Davydovskiy, A. S.	349
Decourt, J.	296
Dehmel, P.	312
Delore, J.	343
Denard, Y.	302
Derman, B. M.	333
Deryagina, O. G.	368
Dittrich, J.	296
Dmitriyev, M. T.	321
Domatov, Y. G.	360
Domagk, G.	307
Drevermann, A.	333
Dubrouil, R.	300
Dumanskiy, A. B.	319
Dunayev, P. F.	349
Dunayev, V. G.	B-2
D'yachenko, P. Y. (BR-SOV/1816)	A-4
Dylong, O. K.	302
Ebensperger, H.	302
Eberius, E.	312
Eberspächer, H.	349
Eckart, F. von.	B-2
Eckinger, K.	352
Eiken, H.	349
Elizondo, A.	305

Author	Page
Emperaire, J.	378
Entin, I. I.	B-2
Epifanov, G. F.	293
Espe, W.	349
Ettorre, R.	307
Ewers, J.	319
Exner, M. L.	371
Fabierkiewicz, Z.	339
Fang, N. -c.	339
Fedorova, L. S.	334
Fedotova, O. Y.	316
Fekete de Ragaly, L. A.	367
Fel'dshteyn, Ya. I.	371
Fendler, H. G.	315
Feodos'yev, V. I.	345
Feofilov, P. P.	374
Fesenkov, V. G.	323
Finkel'shteyn, D. N.	
(BR-SOV/1846)	A-5
(BR-SOV/1906)	A-6
Finken, H.	317
Firsov, L. A.	295
Fomin, V. V.	314
Fominykh, I. P.	
(BR-SOV/1771)	A-3
Fontana, G.	302
Foy, A. M.	307
Franco, A. G.	304
Frehser, J.	366
Fretzdorff, A. M.	297
Freudenberg, K.	315
Frish, S. E.	368
Frohberger, P. E.	298
Fröling, H. E.	339
Funatch, A.	351
Funke, P.	349
Funke, V. F.	333
	354
Fursenko, V. D.	374
Galeiev, V. Kh.	B-2
Galibina, G. I.	374
Galuzo, I. G.	298
Gambu, J.	B-2
Garasimova, O. A.	B-2
Garnyk, G. A.	349
Gaudin, O.	303
Gazarov, A. T.	
(BR-SOV/1812)	A-4
Geertsen, G. I.	378
Gel'fenbein, L. G.	345
Georgobiany, N. I.	294
Gerhard, H.	373
Gerlach, E.	349
Gerling, E. K.	327
Gerngross, O.	353
	354
Gershman, B. N.	361
Gertsriken, S. D.	B-2
Giertz, H. W.	358
Ginzburg, V. L.	376
Gnevyshev, M. N.	295
Gnevysheva, R. S.	295
Gnilosyrov, E. G.	348
Gogishvili, K. S.	324
Gil'berg, L.	B-2

Author	Page
Gol'din, I. D.	
(BR-SOV/2024)	A-7
Gol'dshteyn, Y. Y.	
(BR-SOV/1703)	A-2
Golubtsov, M. G.	
(BR-SOV/1683)	A-2
Gomelskiy, K. Z.	319
Gorb, M. L.	B-2
Gorins	301
Gorlov, B. V.	307
Gostev, V. I.	344
Gottschalk, G.	312
Grandberg, I. I.	316
Grigor'yev, N. L.	
(BR-SOV/1866)	A-6
Grinev, A. N.	316
Grodzenskiy, D. E.	
(BR-SOV/1825)	A-5
Grohn, H.	353
Grohne, D.	362
Gromova, G. N.	323
Gross, F.	302
Grum-Grzhimaylo, N. V.	B-2
Grüneisen, E.	373
Grünfeld, O.	357
Guinet, P.	302
Gulyayev, B. B.	B-2
Gurevich, A. B.	
(BR-SOV/1818)	A-5
Gurevich, M. I.	363
Gzovskiy, M. V.	327
Hagemeyer, F. W.	303
Hagman, N.	309
Hahn, W.	319
Hajek, B.	366
Haler, B.	309
Hallauer, C.	300
Hamalcik, P.	307
Hantzsch, A.	316
Härer, A.	349
Hasimoto, H. A.	349
Heidenhain, W.	349
Heischkeil, W.	350
Heisenberg, W.	362
Heller, S.	297
Helmich, K. K.	B-2
Hinz, W.	B-2
Hofmann, G.	294
Hoshino, K.	333
Hsieh, C.	
(BR-CHICOM/1718)	A-2
Hsieh, H.	
(BR-CHICOM/1815)	A-4
Huang, K.	
(BR-CHICOM/1815)	A-4
Hummel, J.	343
Il'icheva, L. V.	334
Iokheles, F. Ya.	346
Ipatenko, N. G.	292
Ishida, T.	309
Ishlinsky, A. Yu.	361
Ito, H.	335
Ivanov, D. P.	B-2
Ivanov, V. S.	329
Iweins, R.	350

Author	Page
Jacobi, E.	303
Jadin, J.	303
Jálon, M. G. de	296
Jálon, P. G. de	296
Jayle, M. F.	296
Jonnesco, T.	303
Jouhikainen, P.	358
Jung, R. v.	B-2
Kachalkin, G. S.	364
Kalenin, Yu.	B-2
Kalinin, G. P.	
(BR-SOV/1883)	A-6
Karbelashvili, O. D.	329
Kartsev, M. A.	B-2
Kavtaradze, N. N.	328
Kawaguchi, T.	370
Kawai, W.	317
Kawata, Y.	335
Kazantsev, V. A.	320
Kazarnovskiy, D. M.	
(BR-SOV/1867)	A-6
Keibl, E.	307
Khalatnikov, I. M.	376
Khalfin, A. M.	378
Kharkevich, A. D.	339
Khasdan, S. M.	351
Khaytser, V. B.	323
Khmelkov, B.	B-3
Khodorov, B. I.	311
Khrgyan, A. K.	368
Kibardin, Yu.	B-3
Kindbom, L.	368
Kislin, P. S.	B-4
Kirnos, D. P.	328
Kitov, A. I.	
(BR-SOV/1821)	A-5
(BR-SOV/1915)	A-7
Kizewski, P.	339
Klebasinskiy, S. S.	317
Kleymenov, N. A.	320
Klimentova, N. V.	334
Knüppel, H.	333
	334
Knyasev, V.	
(BR-SOV/1771)	A-3
Kobrinskiy, A. Ye.	348
Kobtsev, A.	B-3
Koch, K. H.	350
Koch, L.	320
Kocheshkov, K. A.	318
Kochkin, D. A.	318
Koelsch, F.	308
Kogan-Bol'man, G. I.	346
Kolenkova, M. A.	B-3
Kolesnikov, G. S.	334
Kolesov, S. G.	292
Koloshnikov, V. G.	322
Kolosov, S. P.	B-3
Kol'tsov, N.	B-3
Kondo, K.	300
Kondo, T.	297
Kondyurin, N. G.	292
Konoshenko, P.	B-4
Konson, A. S.	
(BR-SOV/1572)	A-1

Author	Page
Kootz, T.	320
Kormer, S. B.	361
Kornfel'd, V. N.	350
Kornilov, I. I.	B-3
Koropov, V. M.	292
Korotkov, V.	B-3
Kost, A. N.	316
Koster, W.	372
Koton, M. M.	294
Kotov, O. K. (BR-SOV/1808)	A-4
Kotrly, S.	314
Kourilsky, R.	303
Kovner, M. S.	361
Kowalski, W.	312
Koykov, S. N.	340
Krasonogorskaya, N. V.	324
Krause, A.	320
Kravchenko, A. T.	308
Kravchenko, I. V. (BR-SOV/1852)	A-6
Krinitskiy, N. A. (BR-SOV/1916)	A-7
Kriss, A. E.	300
Krivoglaz, M. A. (BR-SOV/2025)	A-7
Krogyus, F. V.	309
	310
Krokhin, E. M.	310
Kronauer, G.	300
Krönig, W.	334
Kruger	316
Krull, W.	318
Krykhtin, M. L.	310
Krylov, D. G.	299
Krylov, Ye. I.	B-3
Kudelya, Ye. S.	366
Kühl, H.	353
Kuhne, K.	B-3
Kuhnemann, O.	298
Kul'batskiy, A. P. (BR-SOV/1805)	A-4
Kulebakin, V. S.	B-3
Kunisuke, M.	301
Kuntz, E.	303
Kurchatov, V. I.	299
Kurdina, Ye. I.	371
Kurenkov, I. I.	310
Kurfirst, S.	B-2
Kushnir, R. M.	B-3
Kuz'min, I. I. (BR-SOV/1632)	A-1
Kuznetsov, V.	B-3
Kwiatkovski, E.	356
Labuda, A. A.	376
Lakhtin, B.	B-5
Landau, L. D.	376
Langer, N. A.	313
Lauer, F. J.	313
Layner, A. I.	B-3
Lebedev, S. M.	B-3
Lebedyeva, N. V.	324
Legat, M.	320
Leistner, M.	369
Leonard, P.	303
Levinson, N. G. (BR-SOV/1784)	A-3
Levshina, O. N. (BR-SOV/1670)	A-2
Lévy, C.	301
Leytes, S. M.	295
Li, L. -c.	327
Li, T. -n.	340
Libizov, N. I.	308
Lie Ping, H.	297
Lifshits, E. M.	320
Likhachev, N. V.	293
Linde, D. P. (BR-SOV/1694)	A-2
Lippmann, O.	303
Litvakovskiy, A. A.	B-2
Litvinov, I. V.	324
Livshits, L. S.	350
Lopatnikova, L. Y.	372
Lossev, I. P.	316
Lou, T. -m.	327
Lüdemann, K. F.	350
Ludwig, H.	334
Lukovtsev, A. A. (BR-SOV/1633)	A-1
Lungu, A. N.	354
Lushchik, Ch. B.	374
Lützkendorf, W.	357
Lyakhovich, L. S. (BR-SOV/1703)	A-2
Maehly, A. C.	297
Magat, M.	353
Maiorova, E. P.	314
Makolkin, I. A.	321
Malinov, L. M.	344
Malkin, B. M.	344
Malkin, K. R. (BR-SOV/1830)	A-5
Malovichko, A. K.	B-3
Manafov, I. I.	292
Mark, H.	332
Marquard, E.	352
Martinkov, E. G.	376
Massion, J.	303
Mathieu, J.	308
Matsuura, Y.	297
Matz, W.	321
Maurer, K.	294
Mazzanti, G.	316
Mednikov, B. M.	328
Medvedev, M. N.	369
Meinke, H. H.	B-3
Merkylov, A. A.	340
Merlina, A. V.	365
Meulen, J. H. van der	313
Meyer, K.	321
Meyer, K. E.	350
Meyerov, M. V.	344
Meyklyar, M. V. (BR-SOV/1776)	A-3
Mikach, R.	358
Mikhaylov, G. P.	321
Mikhaylov, N. A.	292
Mikheyev, M. A.	B-3
Mil'man, B. S.	334
Milyukov, P. I. (BR-SOV/1883)	A-6
Mindlin, S. Z.	300
Minorskiy, V. P. (BR-SOV/1818)	A-5
Miramoto, K.	370
Miroshnichenko, Y. M.	327
Mise, S.	351
Mishutin, D. A.	324
Misme, P.	372
Mitropol'skiy, Yu. A.	360
Miyaguchi, K	309
Miyazaki, S.	335
Mizetskaya, I. B.	374
Mizoguchi, T.	318
Moiseyev, P. A.	308
Mokievskiy, V. A.	B-3
Mordukhai-Boltovskaya, E. D.	310
Moreau, G.	302
Mornex, R.	302
Morozov, I. S.	B-4
Mosikhin, E. P.	361
Moyseyev, P. A.	310
Mühleisen, R.	325
Müller, J.	343
Müller, K.	348
Müller, W.	319
Murzin, L. P.	325
Mushtari, Kh. M.	362
Nacken, R.	374
Naeser, G.	321
Nagorskiy, V. D.	B-3
Nakamura, G.	308
Nalbandyan, A. B.	320
Nal'bornik, E. Ya.	296
Natalis, P.	316
Natta, G.	316
	335
Naumov, V. K.	346
Nechayev, G. K.	340
Nei, T.	369
Nekrashevich, I. G.	376
Nekryach, E. F.	319
Neuberger, F.	356
Neimann, N.	303
Nikhaylov, V. Ya.	B-4
Nikitinskaya, I. V.	310
Nikolayev, E.S.	B-4
Nishioka, A.	316
Noël, G.	302
Noelpp, B.	302
Nohmi, N.	303
Nomine, G.	308
Noren, T. M.	368
Norton, J. T.	364
Novikov, I. I.	368
Novikov, M. M.	B-2
Novikov, T. P.	313
Nunes, R. M. B.	304
Obermeier, I.	358
Oberrauch, H.	317
Ochiai, K.	316
Oelssner, W.	308
Oeters, F.	333

Author	Page
Oiwa, M.	317
Okamoto, T.	351
Okhrimovich, B. P.	355
Okuntsov, I. V.	293
Oliveira, F.C.	301
Oniashvilli, O. D.	B-4
Oppenauer, R. V.	317
Orita, K.	335
Ors Martinez, J.	361
Ortmann, K.	346
Ostlund, G.	355
Ostromislenskiy, I. I.	317
	358
Ostrovskiy, N. I.	308
Oswatitsch, K.	362
Öteren-Panhauser, K. A. v.	357
Pajaro, G.	317
Palmgren, A.	347
Panich, S. I.	350
Panov, D. G.	327
	328
Panov, V. V.	B-4
Parini, V. P.	B-1
Patat, F.	321
Paulini, E.	304
Pavilanis, V.	300
Pechoc, V.	356
Peiseler, H.	304
Pellegrino, J.	301
	304
Pelosi, A. M.	304
Penin, N. A.	340
Pepperhoff, W.	351
Perard, J.	B-2
Perlin, I. L.	351
Pesson, M.	317
Peters, W.	321
	335
Petrov, Yu. N.	351
Petrovich, G. V.	329
Petrovich, N. T.	340
Petru, F.	366
Petushkova, S. M.	314
Pfleiderer, H.	335
Pikush, N. V.	324
Pino, P.	335
Pinus, S.	B-4
Pisarenko, G. S.	B-4
Pitskhelauri, I. A.	355
Plücker, R.	351
Pogonkina, N. I.	313
Pogonyaylo, G. F.	293
Pokrovskiy, G. I.	B-4
Pollitzer, R.	304
Polukhin, F. S.	292
Polyakova, Y. A.	325
Pondé, A. A.	304
Popp, G.	316
Poryvayev, V.	B-4
Pospelova-Shtrom, M. V.	299
Poszwiński, P.	320
Predtechenskiy, G. P. (BR-SOV/1684)	A-2
Preobrazhenskaya, Yu. A.	367
Prochazka, V.	366
Pryadko, M.	B-4
Przyluski, A.	340
Pshezhetskiy, S. Ya.	321
Putz, T.	305
Pyatakova, L. L. (BR-SOV/1703)	A-2
Ragulin, V. V. (BR-SOV/1790)	A-4
Raida, H.	297
Ramm, H.	334
Ratner, S. B.	361
Rauzer-Chernousova, D. M.	299
Ravkin, L. I.	B-4
Raykh, I.	B-5
Reinebeck, L.	313
Reitlinger, S. A.	321
Reitlinger, Ye. A.	299
Rezepov, F. F.	308
Riese, W. A.	357
Rohrig, H.	367
Rolf, E.	341
Rosanow, R. B.	344
Rossow, E.	365
Rotteri, S.	356
Roytbak, A. I.	295
Rozenfel'd, I. L.	368
Rozentsveig, V. Y.	338
Rubinov, A. D. (BR-SOV/1725)	A-3
Rubtsov, N. N.	B-4
Rukina, E. A.	300
Rumyantsev, N. V. (BR-SOV/1729)	A-3
Rumyantsev, S. V. (BR-SOV/1949)	A-7
Rutishauser, W.	295
Rüttiger, K.	332
Rybnikář, F.	317
Rybnikov, V. A.	355
Rzhekhin, V. P.	313
Sachenkov, A. V.	362
Sala, G.	306
Samarin, A. M.	349
Samoylenko, V. I. (BR-SOV/1828)	A-5
Samsonov, G. V.	333
	B-4
Sankin, D. I.	B-4
Sansone, G.	359
Saur, G.	367
Savostin, D. Z. (BR-SOV/1675)	A-2
Sazhin, B. I.	321
Schaepdryver, A. F. de	307
Schenck, G. O.	321
Schenek, R.	317
Schierbaum, F.	353
Schlenk, W., Jr.	315
Schmalhaus, G.	351
Schmidlin, J.	317
Scholz, W.	321
Schoog-Lützenkirchen, A.	305
Schoon, T. G. F.	358
Schröck, O. von	298
Schuler, H.	313
Schüller, H.	313
Schwarzenbach, G.	317
Seidel, S.	341
Semerchan, A. A.	373
	B-4
Semko, R. S.	311
Senkov, V.	B-5
Severov, M. N.	B-5
Shapshinskaya, O. M.	312
Shibanov, A.	B-5
Shik, L. L.	311
Shilova, S. A.	299
Shindel'man, R. I. (BR-SOV/1809)	A-4
Shinohara, Y.	357
Shirkov, D. V.	373
	375
Sholokhovich, F. A.	B-5
Shostakovsky, M. F.	318
Shpak, I. S.	325
Shpinyeva, G. V.	314
Shul'gin, K. A. (BR-SOV/1823)	A-5
Shumyatskiy, B.	B-5
Sianesi, D.	333
Siefken, W.	336
Siemaszko, H.	340
Sigorskiy, V. P. (BR-SOV/1524)	A-1
Silva-Goytia, R.	305
Sinn, H.	321
Sinyagina, V. I.	B-2
Sinyarev, G. B.	345
Siqueira, A. F.	304
Sitnikov, I. I.	360
Skatulla, W.	B-3
Skoczynski, Z.	340
Skok, V. I.	356
Slonimskiy, G. L.	371
Smirnov, A. A. (BR-SOV/2025)	A-7
Sobolev, Yu. S.	B-4
Söhngen, H.	346
Sokolov-Sokolenok, L.	B-5
Sokolova, E. S.	369
Sommerfeld, A.	370
Sretenskiy, L. N.	363
Steinitz, K. H.	305
Stephan, E.	305
Sterman, L. S.	376
Stolyarova, Ye. N.	327
Streltsova, S. V.	311
Stuart, H. A.	315
Stübner, H.	355
Studnits, M. A.	334
Stuhlmann, H.	315
Styushchin, N. G.	376
Suida, H.	336
Suntsov, N. N. (BR-SOV/1971)	A-7
Sushkov, Yu.	B-5
Suzuki, M.	357
Svenson, A. N.	341

Author	Page
Sventitskiy, N. S.	372
Sysoyev, N. N.	328
Takahashi, A.	336
Takahashi, S.	335
Takamoto, S.	313
Talalayeva, T. V.	318
Talbot, J.	365
Tanaka, T.	344
	345
Tananayev, I. V.	314
Tanzawa, H.	357
Tappeiner, J.	305
Tarasov, Yu. A.	376
Tarasova, L. I.	374
Tareyev, B. M. (BR-SOV/1867)	A-6
Tartakovskiy, B. D.	371
Tatiyevskaya, Ye. P.	322
Taubeneck, Ul.	301
Täufel, K.	343
Tephol, W.	357
Terent'yev, A. P.	316
Termakova, V. N.	316
Teszner, S.	341
Theorell, H.	297
Thews, E. R.	365
Thiele, B.	332
Thieme, J.	351
Thinius, K.	354
Tirschek, H.	305
Tix, A.	336
Tolmachev, V. V.	373
Tolokonnikov, L. A.	361
Tomashov, N. D.	368
Tomita, M.	336
Tormazov, F.	B-5
Torssel, K.	322
Traumann, V.	316
Trofimenko, A. I.	374
Trofimov, V. V.	305
Trostyanskaya, E. B.	316
Trunin, R. F.	363
Trusenev, G. M. (BR-SOV/1703)	A-2
Tselikov, V. K.	336
Tsikin, A. N.	340
Tsukerman, S. A.	B-5
Tsygankov, A. S.	329
Tsylev, L. M.	336
Tuffier, T.	295
Tumerman, L. A. (BR-SOV/1853)	A-6
Tyuleneva, N. P.	314
Überreiter, K.	318
Ulbricht, H.	321
Ullman, U.	359
Umanskiy, Ya. S.	B-1
Umstätter, H.	322
Ushakov, G. A. (BR-SOV/2024)	A-7
Uyeo, S.	336
Vanickova, E.	312
Vasilenko, A.	B-5
Vasin, A. V.	343
Vaynshteyn, B. K.	374
Vaynshteyn, L. A.	322
Veenemans, C. F.	341
Véran, P.	305
Vereshchagin, L. F.	360
Verschure, J. C. M.	308
Veynberg, V. B. (BR-SOV/1851)	A-6
Veynik, A. I.	B-5
Vill', V. I.	351
Villa, L.	306
Vinogradov, G. V.	361
Virsanova, L. A.	B-5
Vishnevskiy, A. A.	311
Vladziyevskiy, A. P.	345
Vodop'yanov, K. A.	374
Voight, H.	351
Vol'kenshteyn, M. V.	294
Vol'pe, R. I.	B-5
Voronova, A. A.	374
Votyakov, V.	B-5
Voyt, S. S.	363
Vrestal, J.	314
Vsekhsvyatskiy, S. K. (BR-SOV/1692)	A-2
Vukolov, V.	B-5
Vyshedskiy, M.	B-5
Waburek, H.	348
Wagenknecht, F.	375
Wang, C. -p.	369
Warczewski, Z.	356
Watanabe, M.	333
Weber, F.	357
Weber, J.	337
Wiegand, K.	334
Weitzel, G.	297
Wernicke, R.	306
Winter, A.	355
Wittenberg, D.	322
Wittig, G.	322
Wodniansky, P.	305
Wollmann, E.	301
Yakobson, M. O. (BR-SOV/1810)	A-4
Yakunin, Y. K.	351
Yamada, N.	315
Yamada, S.	318
Yamamoto, T.	325
Yamaguchi, T.	300
Yamazaki, I.	336
Yamutsh, D. A.	B-5
Yanai, K.	316
Yarmol'chuk, G. G.	341
Yaroshevich, V. M.	341
Yashchenko, M. L.	327
Yatsimirskiy, K. B.	375
Yefros, D. A.	376
Yegorov, I. T.	363
Yeremenko, V. N.	355
Yeremina, V. P.	365
Yermolin, G. M.	327
Yokota, N.	323
Yoshimoto, C.	369
Yosida, Z.	375
Yurzhenko, T. I.	323
Zaitseva, G. N.	314
Zakharov, M. V.	B-5
Zaslavskiy, Yu. S.	B-5
Zavyalov, V. D.	327
Zaytseva, M. A.	371
Zaytsev, G. P.	365
Zdrogov, N. N.	348
Zeidler, H.	301
Zeigler, K.	337
Zel'dovich, Ya. B.	361
Zelikman, Y. Y. (BR-SOV/1771)	A-3
Zheleznyakov, V. V.	376
Zhigarev, P.	B-5
Zhigarev, P. F.	B-5
Zhikharev, V. I.	352
Zhornik, D.	363
Zhukhovitskiy, A. A.	314
Zielinski, E.	341
Zinner, G.	318
Zolotareva, O. V.	314
Zubov, V. Ya.	362
Zur, M.	352

SUBJECT INDEX

Subject	Page	Number
Abdominal fissure	303	59-15855
		59-15856
	305	59-15859
Abrasion		
--Physical effects	360	HB-4451
Acetic acids		
--Applications	313	59-10718
--Production	336	59-10669
Acetobacter		
--Physiology	300	59-15615
		59-15616
Acetone		
--Chemical reactions	315	59-15091
Acetylenes		
--Polymerization	316	59-15708
Acoustics		
--Theory	371	59-15780
Acridines		
--Properties	306	59-15907
Acrylic resins		
--Physical properties	361	59-15805
Actinomyces		
--Mutations	300	59-15404
Adhesives		
--Development	354	59-15849
Adrenal cortical extract		
--Therapeutic effects	305	59-15881
Aerial photography		
--Periodicals	325	141 007T-5
		141 007T-6
--USSR	325	141 007T-5
		141 007T-6
Aerodynamic heating		
--Analysis	362	NACA TM-1434
Aerodynamics		
--USSR	362	59-16336
Aeronautical engineering		
--Periodicals	329	141 401T-3
--USSR	329	141 401T-3
Agriculture		
--Periodicals	293	59-13696
		59-13699
		59-13718
		59-13720
Air uptake	349	BISITS-1124
Aktivin	313	ATS-87L31DU
Alakaluf Indians	378	59-15608
Alcohols		
--Chemical reactions	317	59-10680
	322	59-15746
Aldehydes		
--Chemical reactions	317	59-10680
--Preparation	330	RIS 96987
Aldosterone		
--Synthesis	317	59-15377
Alkali metal halide crystals		
--Dielectric properties	374	59-15878
Alkyl phosphates		
--Analysis	312	ATS-99L29R

Subject	Page	Number
Allergic diseases		
--Theory	305	59-10699
Allyl compounds		
--Polymerization	317	59-15516
Aluminum		
--Chemical reactions	367	59-15713
Aluminum alloys		
--Mechanical properties	367	HB-4594
--Temperature factors	367	HB-4594
Aluminum compounds		
--Catalytic properties	335	ATS-51L291
Aluminum compounds (Organic)		
--Synthesis	317	59-15006
Aluminum oxides		
--Electrical properties	340	AEC-tr-2883
Amides		
--Polymerization	333	59-15801
Amines		
--Synthesis	316	59-15906
Amino acids		
--Determination	312	59-15420
	314	ATS-50L29R
--Metabolism	297	59-15772
		59-15773
Aminosalicyclic acid		
--Therapeutic effects	303	59-15431
Ammonium salts		
--Determination	312	59-15427
Angina pectoris	302	59-15474
Animals		
--Pathology	292	59-13669
		59-13700
--Physiology	292	59-13361
		59-13716
		59-13722
	295	59-13460
		59-13631
		59-13698
Antarctic regions	325	59-16993
Antenna radiation patterns		
--Development	339	59-10630
Antennas		
--USSR	337	59-16436
Anthracenes		
--Applications	294	AEC-tr-3572
Anthrax vaccine		
--Effectiveness	292	59-14670
	293	59-14677
--Storage	307	59-14669
Anthropology		
--Tierra del Fuego	378	59-15608
Antibiotics		
--Nutritive value	307	59-15434
--Test results	306	59-15751
Antimony compounds		
--Therapeutic effects	301	59-15602
Antioxidants		
--Testing equipment	358	59-10758

Subject	Page	Number
Aquatic animals		
--Argentina	298	59-15952
--Pacific Ocean	328	59-15964
--Radioactivity	308	59-11664
--USSR	310	59-14183
Arctic regions	325	59-16993
Argon		
--Applications	327	ATS-52L29R
Arizona pectoris	303	59-15539
Armed forces		
--USSR	378	59-16958
Astronautics		
--Theory	329	59-14157
Atmosphere		
--Conductivity	324	59-16280
--Optical properties	323	59-13258
--Thermodynamic properties	372	59-10560
Atomic bomb explosions		
--Biochemical effects	308	59-11664
Atomic clouds		
--Physical effects	368	59-15778
Atomic energy engineering		
--Japan	369	AEC-tr-3431
Atoms		
--Spectra	368	59-14760
Atropine		
--Therapeutic effects	302	59-15756
	304	59-15755
Aurorae		
--Electromagnetic effects	371	59-15569
Automotive industry		
--Periodicals	352	141 110T-13
--USSR	352	141 110T-13
Azeotropes		
--Tables	320	59-15763
Bacteriophages		
--Properties	301	AEC-tr-3524
--Sources	300	59-15894
Ball bearings		
--Production	346	59-15824
Beer	343	59-15850
Benzenes		
--Production	319	BISITS-1247
Benzoic acids		
--Preparation	334	ATS-68L30G
Beverages		
--Chemical analysis	343	59-15850
Bibliography		
--Radiation	308	59-16472
--Science	291	SOVIET
--Scientific reports	291	59-21006
--Space flight	298	59-16479
--Space medicine	298	59-16479
Bile		
--Secretion	303	59-15531
Biology		
--Periodicals	298	59-13612
		59-13693
		59-13715
Biomycin		
--Production	306	59-16148
Bird's eye view	325	59-11380
Birds		
--Parasites	298	59-15895
	299	59-15902
Blood platelets	307	59-15860
Blooming mill	348	59-16994
Boilers		
--Development	345	59-15825
Boiling		
--Physical factors	376	AEC-tr-1781
Boric acid		
--Chemical reactions	322	59-15746
Boron		
--Applications	364	HB-4452
Boron compounds (Organic)		
--Catalytic properties	334	59-15939
--Chemical reactions	334	59-15969
Botulism toxoid		
--Preparation	308	59-16206
Brain		
--Physiology	295	59-11361
	297	59-15772
		59-15773
Brick		
--Materials	355	BISITS-1267
		BISITS-1268
--Test results	355	59-14187
Bromine		
--Chemical reactions	313	ATS-25L31DU
Butyl chromate		
--Chemical properties	317	59-15941
Cadmium crystals		
--Applications	335	59-15653
--Growth	374	59-15729
Calcium aluminates		
--Properties	372	59-15775
Capacitors		
--Applications	341	59-11023
Carbohydrates		
--Metabolism	297	59-15774
Carbon black		
--Development	332	59-10055
Carbon dioxide		
--Determination	343	59-15850
Carbon monoxide		
--Chemical reactions	322	59-15408
--Oxidation	315	59-10213
Carbonyls		
--Chemical reactions	315	RIS-96889
Carboxylic acids		
--Biochemical effects	297	59-10589
--Production	331	RIS-96698
Cast iron		
--Processing	334	HB-4518
	351	BISITS-1233
Castings		
--Microstructure	368	HB-4563
--Production	348	59-16994
Cathodes (Electron tubes)		
--Performance	341	59-10856
Cavitation		
--Analysis	363	59-15095
Cellulose		
--Decomposition	353	59-15360
Cellulose acetates		
--Preparation	316	59-10715
Cements		
--Deterioration	353	59-10733
--Periodicals	337	141 094T-6
--Production	337	141 094T-6
--USSR	337	141 094T-6

Subject	Page	Number
Ceramic materials		
--Applications	352	59-14179
--Periodicals	354	141 068T-12
		59-15803
--USSR	354	141 068T-12
Cermets		
--Conductivity	355	RIS R 770
Chemical analysis	313	ATS-25L31DU
--Theoretical corrections	312	59-15789
Chemical industry		
--China	331	59-11460
--USSR	332	59-18398
		59-18399
Chemistry		
--Periodicals	311	59-13673
		59-13717
		141 055T-14
		141 055T-15
		141 055T-16
	312	141 070T-13
		141 071T-7
		141 075T-14
	315	59-13567
		59-13660
	318	59-13566
	330	141 056T-5
		141 066T-4
	370	141 051T-1
		141 051T-2
		141 051T-3
		141 051T-4
		141 051T-5
--USSR	311	141 055T-14
		141 055T-15
		141 055T-16
	312	141 070T-13
		141 071T-7
		141 075T-14
	330	141 056T-5
		141 066T-4
Cherenkov effect	375	59-21009
Chloramines		
--Determination	313	ATS-87L31DU
Chlorine		
--Solubility	323	59-15614
Chloromycetin		
--Production	308	59-15716
Chlorotrifluoroethylene (Polymerized)		
--Dielectric properties	321	59-14174
Chromatographic analysis		
--Development	314	59-10383
Chromium-iron alloys		
--Phase studies	320	BISITS-1266
Chromium-iron-nickel alloys		
--Test results	364	HB-4452
Circular saws		
--Performance	351	59-15402
Circulatory system		
--Pathology	304	59-10830
	305	59-15453
	352	59-15474
	353	59-15539
Civilian defense systems		
--USSR	342	59-16954
		59-16955
		59-18415

Subject	Page	Number
Climate		
--China	325	59-13173
Closed circuit grinding	344	59-15070
	345	59-15068
Clouds		
--Electrical properties	324	59-16280
Coal		
--Density	356	CCT-163-TT
--Poland	355	59-11080
--Processing	334	59-10192
	364	141 063T-14
--USSR	364	141 063T-14
Coal gas		
--Production	333	59-16374
Coatings		
--Determination	342	59-10954
--Mechanical properties	357	59-15674
Coccidioides		
--Identification	306	59-10365
Codfish	309	59-10256
Coke ovens	319	BISITS-1247
Colchicine		
--Physiological effects	307	59-15860
Communication systems		
--Periodicals	338	141 099T-10
		141 099T-11
	339	141 108T-14
		141 108T-15
--USSR	338	141 099T-10
		141 099T-11
	339	141 108T-14
		141 108T-15
	353	59-16992
		59-18395
Compressible flow		
--Physical factors	363	NACA TM-1413
Concrete		
--Development	327	59-13340
Conferences	328	59-13497
	345	59-15007
	346	59-15823
		59-15828
	371	59-15780
Contact rectifier	341	59-10786
Control systems		
--Applications	344	59-18096
Converter heats	350	BISITS-1153
Copper chlorides		
--Crystal structure	374	59-15876
Copying cameras		
--Applications	378	59-10956
Corundum		
--Temperature factors	319	59-15788
Crystal phosphors		
--Test methods	374	59-15487
Crystallography		
--Periodicals	372	141 065T-6
Crystals		
--Effects of radiation	373	59-15784
--Growth	373	59-15784
		ATS-38L30G
Culture media		
--Development	300	59-15393
Cutting tools		
--Cooling	348	59-15782
--Materials	352	59-14179

Subject	Page	Number
Cyanamide		
--Biochemical effects	296	59-15422
--Determination	297	59-15423
--Photochemical reactions	319	59-15787
Cyanates		
--Chemical reactions	332	59-15888
--Preparation	336	59-15983
Cyanohydrins		
--Synthesis	315	RIS-96889
	317	59-15937
Cybernetics		
--Applications	311	59-11672
--Theory	377	59-14682
Cyclic compounds		
--Spectrographic analysis	313	59-10570
		59-10592
Cyclohexanes		
--Chemical reactions	317	59-15745
Cyclones		
--USSR	325	59-16019
Cyclopentanes		
--Isomerism	316	59-10585
--Spectra	316	59-10585
Cylindrical shells		
--Stresses	362	NACA TM-1433
Data		
--Processing	378	59-10956
Dextrins		
--Chemical properties	315	59-10141
Diabetes		
--Therapy	302	59-15528
Dies		
--Lubrication	356	BISITS-1279
Diodes		
--Materials	340	59-14736
Diseases		
--Pathological effects	292	59-13669
		59-13700
Dispersion dyes	357	59-15581
Distilling plants		
--Design	329	59-16651
Drilling machines		
--Operation	329	CEA-tr-R483
	346	59-14186
Drugs		
--Preparation	307	59-15426
--Testing equipment	307	59-15740
--Therapeutic effects	304	59-10830
Dyes		
--Development	357	59-15581
E605	298	59-15577
Earth moving equipment		
--Design	343	59-16446
Education		
--USSR	295	141 022T-10
Elasticity		
--Theory	358	59-10800
	361	59-21004
	370	59-15790
Elastomers		
--Oxidation	358	59-10758
Electric arcs		
--Applications	318	ATS-92L30F
Electric discharges		
--Thermal effects	376	NP-tr-194

Subject	Page	Number
Electric fields		
--Physical properties	372	59-10560
Electric insulators		
--Materials	341	59-15865
Electric machinery		
--Periodicals	339	141 107T-11
--USSR	339	141 107T-11
Electric motors		
--Development	346	59-14177
Electric power production		
--Costs	339	141 325T
--Periodicals	338	141 087T-9
--Poland	339	141 325T
	340	59-11074
	341	59-11002
--USSR	338	141 087T-9
	353	59-16992
		59-18395
Electrical engineering		
--Periodicals	337	141 096T-12
	338	141 109T-3
--USSR	337	141 096T-12
	338	141 109T-3
Electrical equipment		
--Control systems	344	59-18096
--Periodicals	337	141 098T-11
--USSR	337	141 098T-11
Electrical networks		
--Poland	339	59-11090
	341	59-11023
	352	59-11021
Electrodes		
--Electrical properties	340	59-14736
Electromagnetic waves		
--Absorption	376	MDF G-159
Electronic equipment		
--Development	341	59-10294
--Periodicals	338	141 106T-12
		141 106T-13
--Theory	338	141 106T-12
		141 106T-13
--USSR	338	59-18110
		59-18400
		141 106T-12
		141 106T-13
	347	59-18083
Electronics		
--China	339	59-13064
Electrons		
--Theory	370	59-10887
Electroplating		
--Test results	351	HB-4450
Enamel coatings		
--Development	357	BISITS-1307
Engineering		
--Periodicals	329	141 024T-10
--USSR	329	141 024T-10
Enzymes		
--Chemical reactions	296	59-15422
Epinephrine		
--Determination	296	59-10833
Ergot alkaloids		
--Determination	308	59-11669
Escherichia		
--Effects of radiation	301	AEC-tr-3524

Subject	Page	Number
Esters		
--Synthesis	331	RIS-97045
Ethers		
--Polymerization	316	59-15838
Ethylene polymers		
--Physical factors	321	59-15914
Ethylenes		
--Chemical reactions	330	RIS-96987
--Polymerization	335	ATS-51L29I
		RIS-96964
--Production	319	BISITS-1247
--Toxic effects	308	59-10694
F. I. 5836	306	59-15546
		59-15549
Factice	357	59-15405
Fats		
--Deterioration	343	59-15786
Fatty acids		
--Determination	313	59-18128
Ferrites		
--Crystal structure	371	59-15724
--Dielectric properties	375	59-10995
--Magnetic properties	375	59-10995
--Thermal properties	365	HB-4443
Fertilizers		
--Development	293	59-13586
--Processing	335	59-15367
Fires		
--Analysis	343	59-10255
Fish oils		
--Effects of radiation	343	59-15844
--Oxidation	343	59-15844
Fishes		
--Development	309	59-10207
--Nutrition	310	59-15830
--Physiology	309	59-10256
	311	59-15901
Floating plug	351	BISITS-1328
Fluid flow		
--Electrical properties	376	59-14367
--Oscillation	362	NACA TM-1417
Fluids		
--Motion	376	AEC-tr-1781
Fluorocarbons		
--Polymerization	316	ATS-62L30J
		ATS-63L30J
Flux AN-348-A	313	BISITS-1284
Fog		
--Electrical properties	325	ATS-89L30G
Foot-and-mouth disease		
--Countermeasures	292	59-16203
Foraminifera		
--Classification	299	ATS-46L31R
Forestry		
--Periodicals	294	59-13652
--USSR	294	59-13652
Friction		
--Theory	361	59-15157
--Thermal effects	351	HB-4502
Fuels		
--Applications	341	59-11002
--Poland	356	59-11001
		59-11047
		59-11060
Functions		
--Theory	359	Sansone

Subject	Page	Number
Fungus infections		
--Pathology	306	59-10365
Furan derivatives		
--Oxidation	321	59-15908
--Photochemical reactions	321	59-15908
Furnace head	349	BISITS-1125
Gallstones		
--Therapy	303	59-15971
Gas diffusion		
--Analysis	321	59-15848
Gas discharges		
--Spectra	322	NP tr-197
Gas flow		
--Energy	318	ATS-92L30F
Gas turbines		
--Development	345	59-15007
--Equipment	345	59-15826
--Operation	346	59-12153
Gases		
--Ignition	346	59-12153
--Production	330	141 062T-6
		141 062T-7
--Separation	332	HB-4599
		HB-4601
	334	HB-4561
	336	HB-4605
	350	HB-4600
--Temperature	376	NP-tr-194
Gears		
--Materials	346	HB-4392
Geochemistry		
--Periodicals	326	141 002T-8
		141 002T-9
--USSR	326	141 002T-8
		141 002T-9
Geodesics		
--Periodicals	325	141 007T-5
		141 007T-6
--USSR	325	141 007T-5
		141 007T-6
Geography		
--China	325	59-13173
	326	59-11430
		59-13029
		59-13082
Geological time		
--Determination	326	ATS-42L29R
	327	ATS-52L29R
Geology	327	59-15575
--China	327	59-11534
--Periodicals	326	141 005T-13
		141 005T-14
--Tibet	327	59-11545
--USSR	326	141 005T-13
		141 005T-14
Geophysical prospecting	327	ATS-50L30G
--Indochina	326	141 179T
--USSR	327	59-15843
Geophysics	327	59-15575
--Arctic regions	327	59-15699
--Periodicals	323	141 042T-11
--USSR	323	141 042T-11
Germanium		
--Electrical properties	340	59-14736

Subject	Page	Number
Glass		
--Heat treatment	354	59-15330
		59-15452
	355	59-15331
--Impurities	354	59-15329
--Production	355	59-15325
--Stresses	354	59-15452
Glow discharges		
--Applications	313	59-10570
		59-10592
Glucose		
--Metabolism	300	59-15615
		59-15616
Glues		
--Development	353	59-15348
--Test methods	354	59-15640
Graphite compounds		
--Applications	356	BISITS-1279
Grasses		
--Periodicals	293	59-13718
Grinders		
--Development	344	59-14188
		59-15070
	345	59-15068
		59-15071
--Hazards	343	59-10255
Guanidines		
--Chemical reactions	315	59-15091
Guanine		
--Chemical reactions	318	59-15770
Gyroscopes		
--Mathematical analysis	361	59-18093
Hail		
--Growth	324	59-16283
Heat exchangers		
--Development	345	59-15826
Heat power production		
--Periodicals	342	141 089T-13
		141 089T-14
--USSR	342	141 089T-13
		141 089T-14
Heavy elements		
--Determination	313	59-10718
Helicopters		
--Design	329	59-11891
Helium		
--Properties	320	Lifshits
Hemagglutinins		
--Production	306	59-15751
Herbicides		
--Periodicals	293	59-13699
		59-13720
Hernia	305	59-15859
Herring	310	59-15830
High frequency currents		
--Applications	341	59-11959
Histamines		
--Chemical reactions	305	59-10699
Hog cholera vaccine		
--Effectiveness	293	59-16150
	292	59-16204
		59-16207
	293	59-14679
Hoists		
--Development	352	BISITS-922

Subject	Page	Number
Housing		
--USSR	337	59-16480
Hydraulic presses		
--Equipment	344	BISITS-1250
Hydraulic systems		
--USSR	291	141 092T-10
		141 092T-11
Hydrazine derivatives		
--Synthesis	316	59-15900
Hydrocarbons		
--Biochemical effects	324	59-15252
--Decomposition	335	59-10852
		59-15064
	337	59-15055
Hydrocyanic acids		
--Chemical reactions	315	RIS-96889
--Preparation	335	ATS-77L30J
		ATS-78L30J
Hydrodynamics		
--USSR	362	59-16336
Hydroelectric power systems		
--Periodicals	337	141 091T-14
		141 091T-15
--USSR	337	141 091T-14
		141 091T-15
Hydrogen		
--Adsorption	328	SCL-tr-234
--Diffusion	319	CCT-164-TT
Hydrogen ion concentration		
--Determination	348	RIS-97040
Hydrology		
--China	326	59-13029
		59-13082
--Periodicals	291	141 092T-10
		141 092T-11
	324	141 045T-13
--USSR	291	141 092T-10
		141 092T-11
	324	141 045T-13
Hygrometers		
--Applications	358	59-15970
Hypertensin		
--Physiological effects	307	59-15890
Hypertension		
--Therapy	302	59-15743
Hypoglycemia		
--Physiological effects	297	59-15437
Hypothyroidism		
--Pathology	303	59-10845
Ice		
--Arctic regions	325	59-16993
Image converters		
--Applications	378	59-15829
Impedance bridges		
--Applications	341	59-11959
Inclusion bodies	301	59-10349
Industrial equipment		
--USSR	344	59-16991
Industrial plants		
--Germany	350	BISITS-1208
--USSR	330	141 062T-6
		141 062T-7
Industrial production		
--China	347	59-13400
--Periodicals	347	141 117T-12
--USSR	347	141 117T-12

Subject	Page	Number
Insecticides		
--Biochemical effects	298	59-15577
Instruments		
--Periodicals	347	141 119T-12
		141 119T-13
		141 119T-14
	377	141 112T-7
--Production	347	141 119T-12
		141 119T-13
		141 119T-14
--USSR	338	59-18110
		59-18400
	347	59-18083
		141 119T-12
		141 119T-13
		141 119T-14
	377	141 112T-7
Intraarterial injections	304	59-10830
Inventions		
--Periodicals	347	141 014T-3
--USSR	347	141 014T-3
Iodine		
--Applications	313	ATS-25L31DU
Iron		
--Absorptive properties	320	BISITS-1254
--Corrosion prevention	368	59-15732
--Electrochemistry	319	CCT-164-TT
--Mechanical properties	365	59-15720
--Oxidation	319	59-15794
--Processing	337	BISITS-1294
	350	BISITS-1153
--Sintering	336	HB-4609
Iron industry		
--Periodicals	364	141 063T-14
Iron-manganese alloys		
--Production	364	HB-4562
Iron ores		
--Reduction	322	59-15408
Isopromedol	307	59-13495
Kidneys		
--Development	309	59-10207
Laboratory equipment		
--Periodicals	311	59-13673
Lead		
--Determination	314	59-15421
Leydig cell tumor	302	59-15677
Lice		
--Mexico	305	59-15741
Lipocaine	295	59-15742
Liquids		
--Physical effects	360	Beresnev
Lithium aluminum hydride		
--Chemical effects	319	59-15946
Lithium compounds (Organic)		
--Synthesis	318	59-15375
Lithium iodide		
--Chemical reactions	314	59-15381
Locomotives		
--Production	352	59-16328
--USSR	352	59-16328
Lubricating oils		
--Performance	356	59-15532
Luminescence		
--Theory	375	59-21009
Lungs		
--Pathology	301	59-10849
--Surgery	295	59-15537
Machine tools		
--Control systems	348	59-15846
--Design	344	59-14173
--Equipment	346	59-14177
--Periodicals	347	141 116T-11
		141 116T-12
		141 122T-6
		141 122T-7
--Production	349	59-18103
--USSR	345	59-14172
	347	141 116T-11
		141 116T-12
		141 122T-6
		141 122T-7
Machine translations		
--USSR	378	59-15461
Machines		
--Control systems	344	59-18096
--Production	344	59-18094
--Quality control	344	59-18094
--USSR	344	59-18396
	353	59-16995
Magnesite		
--Applications	355	BISITS-1267
		BISITS-1268
Magnesium		
--Oxidation	321	AEC-tr-1596
Magnesium powders		
--Applications	367	RIS-97033
Magnetic alloys		
--Development	372	59-15816
Magnetic fields		
--Mathematical analysis	371	59-10209
Magnetite		
--Reduction	322	59-15408
Magneto-hydrodynamic waves		
--Propagation	361	MDF G-160
Magnetoactive plasma	376	MDF G-159
Man		
--Physiology	295	59-13460
		59-13631
		59-13698
Manganese		
--Venezuela	367	59-10982
Manganese ores		
--Applications	364	HB-4562
Mapping		
--Periodicals	325	141 001T-10
		141 001T-11
		141 001T-12
--Theory	325	59-11380
--USSR	325	141 001T-10
		141 001T-11
		141 001T-12
Marine biology	300	59-15894
	327	59-15717
Materials		
--Poland	356	59-11060
--USSR	353	59-16995
Mathematics		
--Applications	359	59-14681
--Periodicals	359	141 031T-7
		141 031T-8
		141 033T-14
		141 033T-15

Subject	Page	Number
Mathematics (Con.)		
--Periodicals (con.)	359	141 034T-7
		141 035T-4
		141 036T-7
		141 037T-4
	369	141 017T-2
	370	141 051T-1
		141 051T-2
		141 051T-3
		141 051T-4
		141 051T-5
--USSR	359	141 033T-14
		141 033T-15
		141 034T-7
		141 035T-4
		141 036T-7
		141 037T-4
		141 048T-4
Measurement		
--Instrumentation	377	141 112T-7
Meat		
--Analysis	343	59-16144
Mechanics		
--Periodicals	359	141 034T-7
	360	141 124T-13
		141 124T-14
--USSR	359	141 034T-7
	360	141 124T-13
		141 124T-14
Medical personnel		
--USSR	305	59-13519
Metal alkyls		
--Catalytic properties	337	59-15055
Metallurgy		
--Control systems	348	59-16994
--Periodicals	363	ABSTRACTS
	364	141 027T-15
		141 027T-16
		141 126T-7
		141 133T-4
		141 140T-14
		METAL
	367	141 139T-13
--USSR	332	59-18398
		59-18399
	348	59-16994
	363	ABSTRACTS
	364	141 027T-15
		141 027T-16
		141 063T-14
		141 126T-7
		141 133T-4
		141 140T-14
		METAL
	367	141 139T-13
Metalorganic compounds		
--Catalytic properties	335	RIS 96964
--Chemical reactions	322	59-15942
--Synthesis	317	59-15006
	337	59-15975
Metals		
--Adsorptive properties	328	SCL-tr-234
--Chemical analysis	372	59-14680
--Conductivity	370	59-10887
--Deformation	360	Beresnev
--Heat treatment	364	METAL

Subject	Page	Number
Metals (Con.)		
--Machining	351	59-15466
--Mechanical properties	365	ATS-66L29R
--Physical properties	351	BISITS-1351
--Processing	351	BISITS-1351
--Recovery	365	59-15471
--Test methods	365	BISITS-1348
--Vibration	361	BISITS-1273
Meteorological radar		
--Applications	324	59-15996
Meteorology		
--Periodicals	324	141 045T-13
--USSR	323	59-16444
	324	59-16020
		141 045T-13
Methanes		
--Oxidation	320	59-10175
Micro-wire	340	59-15866
Microbiology		
--Instrumentation	301	59-10661
Microorganisms		
--Periodicals	299	59-13609
		59-13692
--Physiology	299	59-13609
		59-13692
	324	59-15252
	327	59-15717
Mining engineering	329	CEA-tr-R483
--Periodicals	329	141 135T-12
--USSR	329	141 135T-12
Molecular weight		
--Determination	318	59-15917
Monitors		
--USSR	338	59-16464
Moon rocket	342	59-16157
Motion picture photography		
--Equipment	378	59-15829
Muscles		
--Pathology	303	59-15855
		59-15856
	305	59-15859
Naphthalene crystals		
--Spectra	373	59-15308
Nerves		
--Surgery	302	59-15474
	303	59-15539
Newcastle disease virus		
--Culture	300	59-15753
		59-15754
Nickel plating		
--Analysis	348	RIS-97040
Nitric acid		
--Toxic effects	301	59-10849
Nitro compounds (Organic)		
--Separation	331	RIS-97046
Nitrogen		
--Absorption	320	BISITS-1254
	321	BISITS-1255
Noise		
--Analysis	371	NACA TM-1404
Nuclear energy		
--Applications	369	59-16469
Nuclear engineering		
--USSR	369	59-16469
Nuclear physics		
--USSR	370	141 052T-11

Subject	Page	Number
Nuclear physics (Con.)		
--USSR (con.)	370	141 052T-12
		141 052T-13
		141 052T-14
Nylon		
--Physical properties	315	59-15257
Nylon thread	360	HB-4451
Ocean bottom		
--Arctic regions	328	59-15700
Ocean currents		
--Analysis	328	59-15869
Oceanography		
--Instrumentation	328	59-15869
Oil-bearing formations	326	ATS-85L31R
Open hearth furnaces		
--Design	349	BISITS-1124
		BISITS-1125
	351	BISITS-1215
		BISITS-1228
--Operation	350	BISITS-1194
Optical images		
--Analysis	370	59-15276
Optics		
--Periodicals	372	141 047T-14
		141 047T-15
		141 047T-16
--USSR	372	141 047T-14
		141 047T-15
		141 047T-16
Organic acids		
--Chemical reactions	318	59-15886
Organic compounds		
--Periodicals	315	59-13567
		59-13660
--Polymerization	334	59-15939
Organic compounds (Labeled)		
--Synthesis	317	59-15006
Oscillations		
--Mathematical analysis	360	59-18102
Osmosis		
--Applications	318	59-15917
Oxidants	317	59-15941
Oxidation-reduction reactions		
--Applications	336	59-15267
Oxygen		
--Separation	333	HB-4602
Oxygen consumption		
--Physiological factors	295	59-15472
Paints		
--Analysis	357	59-15974
Paleoecology	299	ATS-46L31R
Pancreas		
--Physiology	295	59-15742
Paper		
--Moisture content	358	59-15970
--Tensile properties	359	59-15179
Parachute jumping		
--USSR	363	59-16011
Parasitic infections		
--Therapy	303	59-15682
Parasitology		
--Periodicals	309	59-13615
		59-13675
		59-13712

Subject	Page	Number
Particles		
--Energy	375	59-18416
--Measurement	345	59-15071
--Separation	344	59-15070
--Theory	375	59-21009
	376	59-10994
Particles (Airborne)		
--Radioactivity	368	59-15778
Pathology		
--Periodicals	301	59-13607
		59-13691
Pavements		
--Materials	353	59-10794
Penicillin		
--Preparation	308	59-15604
Peptides		
--Determination	312	59-15420
Perfusion	304	59-15601
Periodicals		
--USSR	291	SOVIET
Permeability	321	59-15848
Peroxidase		
--Chemical reactions	297	59-15177
Peroxides		
--Catalytic properties	323	59-15923
Petroleum		
--Sources	326	ATS-85L31R
	327	ATS-50L30R
--USSR	356	59-16440
Petroleum industry		
--USSR	331	59-18419
Pharmacology		
--Periodicals	306	59-13649
		59-13659
		59-13723
Phase distortion		
--Analysis	340	59-16558
Phenanthroline		
--Therapeutic effects	303	59-15682
Phosphoric acids		
--Chemical reactions	331	RIS-97045
Phosphors		
--Analysis	374	59-15721
Photography		
--Periodicals	353	141 073T-6
--USSR	353	141 073T-6
Photomultipliers		
--Applications	369	59-21003
--Testing equipment	341	59-11957
Photosynthesis		
--Analysis	296	59-10392
Physical chemistry		
--Periodicals	318	141 064T-6
	319	141 072T-13
		141 072T-14
--USSR	318	141 064T-6
	319	141 072T-13
		141 072T-14
Physics		
--Periodicals	369	141 017T-2
		141 041T-11
		141 041T-12
	370	59-13671
		59-13719
		141 040T-6
		141 051T-1

Subject	Page	Number
Physics (Con.)		
--Periodicals (con.)	370	141 051T-2
		141 051T-3
		141 051T-4
		141 051T-5
		141 052T-11
		141 052T-12
		141 052T-13
		141 052T-14
		141 053T-13
	372	141 065T-6
	375	141 049T-13
		141 049T-14
--Study and teaching	370	141 040T-6
--USSR	369	141 041T-11
		141 041T-12
	370	59-13671
		59-13719
		141 040T-6
		141 052T-11
		141 052T-12
		141 052T-13
		141 052T-14
		141 053T-13
	372	141 065T-6
	375	141 049T-13
		141 049T-14
Pigments		
--Properties	335	59-15653
	357	59-15974
Pills	307	59-15740
Piperidine derivatives		
--Metabolism	296	59-15951
--Physiological effects	307	59-13495
Pipes		
--Coatings	342	59-10954
--Production	351	BISITS-1328
Plants		
--Argentina	298	59-15952
--Pathology	293	59-13696
--Physiology	293	59-13585
	294	59-13701
	298	59-15577
Plastic flow		
--Analysis	361	59-10264
Plastic paints		
--Stability	357	59-15875
Plastics		
--Effects of radiation	353	59-15928
--Optical properties	294	AEC-tr-3572
Plywood		
--Materials	353	59-15348
Pneumatic systems		
--Design	344	59-14188
Pneumococcus		
--Identification	301	59-15541
Pneumonic plague		
--USSR	304	59-10998
Poliomyelitis virus		
--Culture	300	59-15393
Polymerization		
--Analysis	323	59-15923
--Effects of radiation	353	59-15928
--Physical factors	321	59-15914
Polymers		
--Adhesion	354	59-15849
--Materials	318	CCT-165-TT
--Microstructure	321	59-15848
--Physical properties	319	59-15041
--Production	332	59-15873
--Viscosity	322	59-15966
Pott-Broche method	334	59-10192
Powder alloys		
--Phase studies	364	59-10525
Power plants		
--Equipment	342	59-10954
--Periodicals	341	141 084T-15
--USSR	341	141 084T-15
Precipitation		
--Japan	325	59-15535
--Korea	325	59-15535
--USSR	324	59-16282
Pregnandiols		
--Excretion	296	59-15540
Presses (Metalworking)		
--Operation	349	ATS-74L30G
Pressure		
--Chemical effects	321	59-15914
Probability (Statistics)		
--Theory	359	141 048T-4
Procaine		
--Decomposition	308	59-15429
Promedol	307	59-13495
Propenes		
--Production	330	RIS-96996
--Therapeutic effects	303	59-15971
Proscalun	302	59-15756
	304	59-15755
Protective clothing		
--Test results	369	59-15459
Psychoses	303	59-10845
Pterins		
--Isomerism	317	59-15731
Pulse discriminators		
--China	369	59-11498
Pulse transformers		
--Design	339	59-11511
Pump drive	344	BISITS-1250
Pyrazoles		
--Isomerism	315	59-15430
Pyrimidines		
--Chemical reactions	316	59-10726
--Physiological effects	297	59-15437
		59-15774
--Synthesis	336	59-15380
Quantum mechanics	375	59-18416
	376	59-10994
--Mathematical analysis	376	59-10381
Quartz crystals		
--Growth	374	59-15718
Radar		
--Applications	328	59-15869
Radiation		
--Bibliography	308	59-16472
--Chemical effects	353	59-15928
--Countermeasures	308	59-16472
Radiation counters		
--Calibration	369	AEC-tr-3276
Radio communication systems		
--Equipment	338	141 104T-11

Subject	Page	Number
Radio communication systems (Con.)		
--Equipment (con.)	338	141 104T-12
--Periodicals	338	141 104T-11
		141 104T-12
--USSR	338	59-16464
		141 104T-11
		141 104T-12
Radio waves		
--Meteorological factors	372	59-10560
--Propagation	338	141 106T-12
		141 106T-13
	376	59-13547
Radiochemistry		
--Theory	321	59-21010
Radioisotopes		
--Preparation	369	AEC-tr-3276
Railroads		
--Poland	352	59-11021
Rancidity	343	59-15786
Rayon fibers		
--Processing	357	ATS-98L29J
Reaction (Psychology)		
--Analysis	295	59-13205
Reaction drive device	346	59-12153
Reagents		
--Costs	308	59-15858
Recreation		
--USSR	342	59-16955
Rectifiers		
--Development	341	59-10786
Refractory materials		
--Periodicals	354	141 134T-13
		141 134T-14
		141 134T-15
--USSR	354	141 134T-13
		141 134T-14
		141 134T-15
Reinforced concrete		
--Applications	353	59-10794
Reproduction system		
--Pathology	303	59-15531
Reserpine		
--Therapeutic effects	305	59-15453
Resins		
--Physical properties	316	ATS-62L30J
--Polymerization	330	RIS-61009
Resistors		
--Development	340	59-15866
Respiration		
--Analysis	311	59-15901
Rickettsia		
--Africa	303	59-15739
--Pathological effects	303	59-15739
Ritalin	296	59-15951
Rock		
--Analysis	323	ATS-49L30R
--Erosion	323	ATS-49L30R
Rockets		
--Handbooks	345	59-16775
Rockwell test	365	BISITS-1348
Roller bearings		
--Test results	347	59-10065
Rolling mills		
--Control systems	348	BISITS-1198
--Mathematical analysis	349	59-15066
Rubber		
--Chemical analysis	358	59-10697
--Microstructure	358	59-10800
Saccharide polymers		
--Applications	358	59-15723
Salmon	310	59-15957
--Growth	309	59-15955
--Pacific Ocean	309	59-15953
		59-15961
		59-15963
		59-15965
	310	59-15956
		59-15958
		59-15960
		59-15962
	311	59-15959
Satellite vehicle research		
--USSR	342	59-16157
		59-16962
Satellite vehicles		
--Tracking	342	59-11665
--USSR	342	59-11665
		59-16962
Scandium		
--Preparation	366	CCT-129-TT
Schistosoma		
--Dehydration	304	59-15600
--Recovery	304	59-15601
Schistosomiasis		
--Diagnostic methods	304	59-15599
--Pathology	301	59-15602
Science		
--Bibliography	291	SOVIET
--Periodicals	377	141 015T-21
		141 015T-22
		141 015T-23
		141 015T-24
		141 015T-25
		141 016T-11
		141 019T-7
		141 019T-8
		141 020T-13
--USSR	377	59-11540
		141 015T-21
		141 015T-22
		141 015T-23
		141 015T-24
		141 015T-25
		141 016T-11
		141 019T-7
		141 019T-8
		141 020T-13
Scientific organizations		
--USSR	377	59-16485
Scientific reports		
--Bibliography	291	59-21006
Scientific research		
--China	327	59-13340
	377	131 891T-24
		131 891T-25
--USSR	377	131 891T-24
		131 891T-25
--Yugoslavia	377	131 891T-24
		131 891T-25
Scintillation counters		
--Equipment	369	59-21003

Subject	Page	Number
Scotch pine	298	59-15464
Scrap	365	59-15471
Sea water		
--Reflective effects	376	59-13547
Seismic waves		
--Analysis	328	59-13497
Seismographs		
--Applications	327	59-15843
Seismological stations		
--Equipment	328	59-16866
Selenium		
--Purification	367	RIS-97033
Seimconductors		
--Applications	341	59-10294
--China	340	59-13424
Sheets		
--Hydrodynamic characteristics	363	59-15095
		59-15414
		NACA TM-1413
--Production	349	BISITS-1232
Ships		
--Motion	363	59-15785
Shock waves		
--Physical effects	361	59-15805
	363	59-15750
	371	NACA TM-1409
Silicon		
--Determination	312	59-10137
Silicon carbon crystals		
--Growth	372	RIS-97024
Silicon compounds (Organic)		
--Synthesis	318	CCT-165-TT
Silicon nitrides		
--Applications	354	59-15803
--Production	333	59-15749
Silver oxides		
--Catalytic properties	315	59-10213
Skin		
--Pathology	305	59-15881
SMPi	307	59-15434
Snow crystals		
--Theory	375	59-15585
Sodium nitrites		
--Applications	368	59-15732
Soils		
--Chemical properties	324	59-15252
--China	326	59-13082
--Erosion	293	59-13586
--Properties	293	59-13586
Solar corona		
--Spectrographic analysis	294	59-16048
	295	59-16060
Soldering		
--Tables	349	59-10214
Solids		
--Acoustic properties	371	59-11923
--Crystal structure	373	59-10953
		NASA RE 2-18-59W
Sound		
--Adsorption	371	59-11923
--Reflection	371	NACA TM-1409
--Refraction	371	NACA TM-1409
Space flight	342	59-16157
--Bibliography	298	59-16479
Space medicine		
--Bibliography	298	59-16479
Spectroscopy		
--Applications	372	59-14680
--Periodicals	372	141 047T-14
		141 047T-15
		141 047T-16
--USSR	372	141 047T-14
		141 047T-15
		141 047T-16
Spotted fever		
--France	303	59-15424
--Mexico	305	59-15741
Stainless steel		
--Processing	348	HB-4470
Stearic acids		
--Molecular structure	297	59-10589
Steel		
--Casting	350	HB-4600
--Corrosion	368	HB-4461
--Deformation	360	59-15802
		NACA TM-1411
	365	HB-4447
--Fracture	367	HB-4595
--Hardening	365	HB-4447
--Heat treatment	336	HB-4390
--Mechanical properties	336	HB-4390
	346	HB-4392
	360	HB-4451
--Microstructure	367	59-15820
	368	BISITS-1241
--Phase studies	321	BISITS-1197
--Processing	321	BISITS-1255
	332	HB-4599
		HB-4601
	333	HB-4602
	334	HB-4561
	336	HB-4605
	349	ATS-75L30G
		HB-4362
--Production	350	BISITS-1163
--Test methods	362	HB-4515
--Welding	350	HB-4120
Steel castings		
--France	350	BISITS-1230
--Production	348	HB-4470
Steel industry	350	BISITS-1252
--East Germany	350	BISITS-1163
--Germany	350	BISITS-1208
	352	BISITS-1071
--Periodicals	364	141 063T-14
	365	141 136T-14
--USSR	365	141 136T-14
Steel wire		
--Processing	349	BISITS-1245
Steroids		
--Physiological effects	306	59-15546
		59-15549
--Therapeutic effects	305	59-10836
Streptomyces		
--Physiology	308	59-15716
Streptomycins		
--Therapeutic effects	302	59-15760
	303	59-15431
	305	59-15425

Subject	Page	Number
Styrene polymers		
--Molecular weight	318	59-15917
Styrenes		
--Polymerization	333	59-15978
Sulfonamides		
--Therapeutic effects	301	59-15752
	302	59-15880
	307	59-15857
Sufonic acids		
--Chemical reactions	321	59-10473
Sulfur		
--Separation	334	HB-4518
Sulfuric acid		
--Recovery	330	RIS-97035
Sun		
--Spectrographic analysis	294	59-16049
Superconductivity		
--Theory	373	Bogolyubov
Supersonic flight		
--Analysis	362	NACA TM-1434
Surfaces		
--Machining	351	59-15466
	352	59-14179
Surgery		
--Instrumentation	311	59-11672
Sustained release drugs	307	59-15426
Switching circuits		
--Synthesis	339	59-15719
Synthetic fibers		
--Processing	356	59-15815
	357	59-15581
--Temperature factors	356	59-15815
Synthetic rubber		
--Preparation	357	59-15405
Synthetic waxes		
--Chemical analysis	313	59-15527
Tectonophysics	327	59-15575
		59-15699
Television transmitters		
--Development	339	59-13531
Terrestrial magnetism		
--Arctic regions	371	59-15569
Testes		
--Neoplasms	302	59-15677
Testosterone		
--Therapeutic effects	306	59-15388
Tetracycline		
--Therapeutic effects	301	59-15752
Textiles		
--Processing	357	ATS-01L30J
Thermistors		
--Theoretical corrections	340	59-14180
Thiazoles		
--Chemical reactions	316	59-15870
		59-15871
Thin films		
--Electrical properties	340	AEC-tr-2883
Thorium		
--Determination	314	59-10228
Threads		
--Mechanical properties	357	ATS-01L30J
Ticks		
--Classification	298	59-15903
	299	59-15841
--Czechoslovakia	298	59-15895
--Mexico	305	59-15741
--USSR	298	59-15903
	299	59-15817
		59-15897
		59-15902
Tissues (Biology)		
--Chemical analysis	297	59-15423
Titanium		
--Chemical reactions	367	59-15713
Titanium alloys		
--Spectrographic analysis	366	59-16068
--Welding	366	59-16068
Titanium compounds		
--Catalytic properties	335	ATS-51L29I
Tool steel		
-- Heat treatment	366	59-15819
Tourism	342	59-16955
Tractors		
--Applications	343	59-16446
Transformer steel	349	HB-4362
Transition elements		
--Crystal structure	375	59-15728
Translations		
--Indexes	291	SOVIET
Transmission gears		
--Development	346	59-15828
Transportation		
--USSR	353	59-16992
		59-18395
Trees		
--Meteorological factors	294	59-10921
--Physiology	298	59-15464
TU-104B	329	59-18417
Tuberculosis		
--Therapy	302	59-15760
	303	59-15431
	305	59-10836
		59-15425
Tularemia		
--USSR	304	59-10999
Turbine blades		
--Vibration	346	NACA TM-1412
Turbines		
--Development	345	59-15825
	346	59-15823
Turbojet engines		
--Design	329	59-18417
Turbulent flow		
--Analysis	362	NACA TM-1431
Ultracortenol	305	59-15881
Ultrasonic radiation		
--Applications	344	59-14173
--Transmission	361	BISITS-1273
Ultraviolet radiation		
--Biochemical effects	301	AEC-tr-3524
Uranium oxides		
--Catalytic properties	320	CCT-995-TT
--Electrolysis	320	AEC-tr-2701
Urea		
--Chemical reactions	315	59-15887
Urethane polymers	336	59-15983
Urethanes		
--Polymerization	332	59-15888
Urine		
--Chemical analysis	308	59-15858

Subject	Page	Number
Vacuum furnaces		
--Applications	332	HB-4599
		HB-4601
	333	HB-4602
	336	HB-4605
	350	HB-4600
--Performance	349	HB-4362
Vasomotor drugs		
--Physiological effects	295	59-15472
Vegetable oils		
--Chemical analysis	313	59-18128
--Effects of radiation	343	59-15844
--Oxidation	343	59-15844
Vegetables		
--Periodicals	293	59-13703
Vehicles		
--Vibration	352	59-10139
Vermilion	335	59-15653
Veterinary medicine		
--Study and teaching	292	59-16205
--USSR	292	59-16151
		59-16205
Vibration		
--Application	368	HB-4563
Vibration isolators		
--Development	352	59-10139
Vickers test	365	BISITS-1348
Vinyl compounds		
--Synthesis	318	CCT-165-TT
Vinyl cyanide		
--Polymerization	334	59-15969
	336	59-15267
		59-15791
Vinyl polymers		
--Reduction	319	59-15946
Virus diseases		
--Pathology	301	59-10349
Viruses		
--Periodicals	299	59-13690
		59-13695
		59-13702
	300	59-11169

Subject	Page	Number
Visibility		
--Meteorological factors	325	59-15882
Waste gases		
--Processing	337	BISITS-1294
Water		
--Physical factors	363	59-15750
Water supplies		
--Applications	350	BISITS-1252
	352	BISITS-1071
--USSR	291	141 092T-10
		141 092T-11
Water vapor		
--Chemical effects	322	59-15408
Waveguides		
--Theory	338	141 106T-12
		141 106T-13
Welded joints		
--Spectrographic analysis	366	59-16068
--Structural analysis	350	HB-4120
Welding		
--Periodicals	347	141 125T-13
		141 138T-15
--Tables	349	59-10214
--Temperature factors	351	HB-4502
--USSR	347	141 125T-13
		141 138T-15
Welds		
--Corrosion	368	HB-4461
Wood		
--Decomposition	353	59-15360
Wood pulp		
--Processing	358	59-10251
		59-15723
Zinc alloys		
--Production	333	59-15093
Zinc oxides		
--Determination	312	BISITS-1192
Zirconium		
--USSR	367	59-16477
Zodiacal light	323	59-13258

JOURNAL INDEX

Journals marked with an asterisk are translated cover to cover.

Journal	Page
Abhangigkeit der Arterioyenösen Sauerstoffdifferenz und des Sauerstoffverbrauchs der Hinterextremität des Kaninchen von der Durchströmungsgrösse und der Wirkung Gefässverengender Pharmaka, Basle	295
*Abstracts of Soviet Medicine	C-1
Académie des Sciences, Paris. Comptes Rendus (France)	
1946, v. 222, p. 733-734	320
1958, v. 247, no. 19, p. 1612-1613	365
Académie National de Mèdecine, Paris. Bulletin (France)	
1920, ser. 3, v. 84, p. 93-102	303
1932, ser. 3, v. 107, no. 4, p. 126-128	301
Accademia Nazionale dei Lincei. Classe di Scienze Fiziche, Matematiche e Naturali. Rendiconti (Italy)	
1958, ser. 8, v. 25, no. 1/2, p. 3-12	316
Acta Chemica Scandinavica (Denmark)	
1950, v. 4, no. 3, p. 422-434	297
Actas de Tercer Congreso Ingenieria Sanitaria Interamericano, Buenos Aires, R. Argentina	
19-30 Nov 52, p. 689-697	298
Activities in the Arctic and Antarctic	
11 June 59, no. 10	325
Acustica (Switzerland)	
1954, v. 4, no. 3, p. 365-379	371
1955, v. 5, no. 3, p. 149-165	371
Akademiya Nauk Armyanskoy SSR. Yerevan. Izvestiya. Seriya Fiziko-Matematicheskikh Nauk	
1958, vol. 11, no. 5, p. 3-127	369
Akademiya Nauk Kazakhskoy SSR, Alma-Ata. Vestnik	
1958, no. 8, p. 3-9	323
Akademiya Nauk SSSR. Doklady	
1947, v. 57, p. 833-836	300
1951, v. 76, no. 1, p. 157-160	311
1951, v. 77, no. 3, p. 435-438	314
1951, v. 78, no. 3, p. 523-526	368
1952, v. 83, no. 3, p. 443-446	361
1954, v. 96, no. 2, p. 261-264	376
1955, v. 101, no. 3, p. 477-478	320
1955, v. 101, no. 6, p. 1017-1018	295
1955, v. 104, no. 3, p. 462-465	327
1955, v. 105, no. 2, p. 339-342	328
1956, v. 107, no. 3, p. 467-470	356
1956, v. 107, no. 6, p. 843-846	319
1956, v. 109, no. 1, p. 113-116	318
1956, v. 110, no. 4, p. 688-691	310
1957, v. 112, no. 6, p. 1043-1046	339
1957, v. 114, no. 3, p. 662-665	296
1958, v. 120, no. 1, p. 43-46	B-5
1958, v. 121, no. 1, p. 67-69	363

Journal	Page
Akademiya Nauk SSSR. Doklady. (Con.)	
1958, v. 121, no. 5, p. 862-864	316
1958, v. 122, no. 1, p. 48-50	361
1958, v. 122, no. 3, p. 420-423	320
1958, v. 122, no. 6, p. 959-1131	377
1958, v. 123, no. 4, p. 583-767	377
1958, v. 123, no. 6, p. 959-1139	377
1959, v. 124, no. 1, p. 11-240	377
1959, v. 124, no. 2, p. 249-496	377
*Biological Science Papers	C-1
*Botanical Science Papers	C-1
*Otdel Biokhimii	C-1
*Otdel Fizicheskoy Khimii	C-1
*Otdel Geokhimii	C-1
*Otdel Geologii	C-1
*Otdel Khimicheskaya Tekhnologiya	C-1
*Otdel Khimii	C-1
*Otdel Prikladnoy Fiziki	C-1
*Physics Papers	C-1
Akademiya Nauk SSSR. Geofizicheskiy Institut. Trudy	
1955, no. 27(154), 168p.	328
Akademiya Nauk SSSR. Institut Fiziologii. Trudy	
1957, v. 6, p. 470-476	295
Akademiya Nauk SSSR. Institut Goryuchikh Iskopayemykh. Trudy (USSR)	
1957, v. 7, p. 61-65	333
Akademiya Nauk SSSR. Institut Okeanologii. Trudy	
1956, v. 19, p. 117-128	328
Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya	
1958, no. 4, p. 416-421	300
Akademiya Nauk SSSR. Izvestiya.	
*Seriya Fizicheskaya	C-1
1947, v. 11, no. 3, p. 319-325	372
1958, v. 22, no. 3, p. 288-295	374
1958, v. 22, no. 6, p. 718-719	322
1958, v. 22, no. 6, p. 720-724	376
1958, v. 22, no. 12, p. 1422-1540	369
1959, v. 23, no. 1, p. 2-152	369
Akademiya Nauk SSSR. Izvestiya.	
*Seriya Geofizicheskaya	C-1
1958, no. 2, p. 277-279	324
1958, no. 4, p. 527-535	324
1958, no. 11, p. 1265-1424	323
1958, no. 12, p. 1522-1529	328
Akademiya Nauk SSSR. Izvestiya.	
*Seriya Geologicheskaya	C-1
1957, no. 11, p. 103-124	299
1959, v. 24, no. 3, p. 19-127	326
1959, v. 24, no. 4, p. 3-127	326
Akademiya Nauk SSSR. Izvestiya. Seriya Matematicheskaya	
1958, v. 22, no. 6, p. 737-872	359
1959, v. 23, no. 1, p. 3-155	359

Journal	Page
Akademiya Nauk SSSR. Komissiya po Opredeleniyu Absolyutnogo Vozrasta Geologicheskikh Formatsii. Byulleten'	
1957, no. 2, p. 8-27	327
Akademiya Nauk SSSR. Mathematicheskiy Institut. Trudy	
1958, v. 51	377
1958, v. 52	359
*Akademiya Nauk SSSR. Otdeleniye Khimicheskikh Nauk. Izvestiya	C-2
1952, no. 2, p. 236-237	334
1957, no. 5, p. 652-653	334
1959, no. 1, p. 3-181	311
1959, no. 2, p. 185-373	311
1959, no. 3, p. 379-568	311
Akademiya Nauk SSSR. Otdeleniye Tekhnicheskikh Nauk. Izvestiya	
1946, no. 4	363
1947, no. 9	376
1948, no. 6, p. 889-898	336
1957, no. 5, p. 48-55	360
1958, no. 10, p. 3-160	377
1958, no. 12, p. 3-153	377
Akademiya Nauk SSSR. Vestnik	
1958, v. 28, no. 1, p. 69-70	373
1958, v. 28, no. 1, p. 91-93	363
1958, v. 28, no. 6, p. 28-34	329
Akademiya Nauk URSR, Kiev. Dopovidi	
1959, no. 1, p. 3-106	377
1959, no. 1, p. 46-48	B-4
*Akusticheskiy Zhurnal (USSR)	C-2
1958, v. 4, no. 3, p. 292-294	371
All-Union Conference on Gas Electronics (No. 2)	
1958, p. 1-3	B-1
Allgemeine Papier-Rundschau (West Germany)	
1958, v. 6, no. 22, p. 1126-1129	358
Analytica Chimica Acta (Netherlands)	
1953, v. 8, no. 6, p. 510-525	312
Angewandte Chemie (Germany)	
1931, v. 44, no. 13, p. 231-237	354
1931, v. 44, no. 21, p. 383-385	319
1947, v. 59, no. 9, p. 257-288	332
1956, v. 68, no. 23, p. 721-729	337
1957, v. 69, no. 12, p. 419-422	315
1957, v. 69, no. 14, p. 480	318
1958, v. 70, no. 16, p. 496-500	321
1959, v. 71, no. 3, p. 110-119	332
l'Angine de Poitrine et l'Agine Abdominale, Paris	
1927, p. 332, 334-337, 354-355 and 357	302
Annales d'Endocrinologie (France)	
1949, v. 10, no. 2, p. 161-166	296
Annales de Radioélectricité (France)	
1954, v. 9, no. 36, p. 193-216	371
Annales Pharmaceutiques Françaises	
1958, v. 16, no. 2, p. 125-133	308
Annali di Chimica (Italy)	
1958, v. 48, no. 2, p. 193-197	317
Annali di Microbiologia (Italy)	
1954, v. 6, p. 51-60	324
*Antibiotiki (USSR)	C-2
Aptechnoye Delo (USSR)	
1959, v. 8, no. 1, p. 29-34	308
Archiv für das Eisenhüttenwesen (West Germany)	
1953, v. 24, no. 11/12, p. 483-495	366
1957, v. 28, no. 12, p. 807-823	321
Archiv für die Gesante Virusforschung (Austria)	
1958, v. 8, no. 1, p. 95-112	300
1958, v. 8, no. 3, p. 397-409	300
Archiv für Klinische und Experimentelle Dermatologie (Germany)	
1958, v. 207, no. 3, p. 261-267	305
Archiv für Meteorologie und Geophysik. Series A. Meteorologie und Geophysik (Austria)	
1959, v. 11, p. 93-108	325
Archiv für Pharmazie und Berichte der Deutschen Pharmazeutischen Gesellschaft (Germany)	
1955, v. 288, no. 4, p. 186-194	308
Archiv für Psychiatrie und Nervenkrankheiten (Germany)	
1928, v. 86, p. 426-441	303
Archives des Maladies de l'Appareil Digestif et des Maladies de la Nutrition (France)	
1955, v. 44, no. 9-10, p. 1081-1083	301
Archives Internationales de Pharmacodynnamie et de Thérapie (Belgium)	
1959, v. 119, p. 497-501	307
Argasid Ticks and their Epizootological Significance, Alma-Ata	
1957, p. 83-85	298
Arkiv for Kemi (Sweden)	
1952, v. 3, no. 62, p. 571-580	322
Arztliche Wochenschrift (Germany)	
1956, v. 11, no. 42, p. 941-943	302
Asimptoticheckiye Metody v Teoriy Nelineynykh Kolebaniy, Moscow	
1955	360
Asociacion Quimica Argentina. Anales	
1949, v. 37, no. 186, p. 246-262	317
Astrofizicheskaya Observatoriya, Abastumani. Byulleten' (USSR)	
1953, no. 15, p. 169-260	294
1954, v. 17, p. 149-272	294
*Astronomicheskiy Zhurnal (USSR)	C-2
1958, v. 35, no. 3, p. 323-334	323
*Atomnaya Energiya (USSR)	C-2
ATZ Automobiltechnische Zeitschrift (Germany)	
1956, v. 58, no. 5, p. 134-138	352
1956, v. 58, no. 6, p. 153-161	352
*Avtomaticheskaya Svarka (USSR)	C-2
1956, v. 9, no. 5, p. 80-83	313
1957, v. 10, no. 4(55), p. 29-32	366
1959, v. 12, no. 1, p. 3-92	347
*Avtomatika i Telemekhanika (USSR)	C-2
1958, v. 19, no. 3, p. 257-267	341
1958, v. 19, no. 11, p. 997-1076	337
Avtomobil'naya Promyshlennost' (USSR)	
1959, no. 3, p. 1-48	352
Avtomombil'nyye Dorogi (USSR)	
1958, v. 21, no. 5, p. 23-24	353
Beitrage zur Klinik der Tuberkulose und Spezifischen Tuberkulose-Forschung (Germany)	
1957, v. 117, no. 2, p. 259-264	303

Journal	Page
*Biofizika (USSR)	C-2
*Biokhimiya (USSR)	C-2
Bollettino Chimico-Farmaceutico (Italy) 1953, v. 92, p. 49-50	307
Bol'shaya Sovetskaya Entsiklopedia (USSR) 1957, v. 50, p. 430-510	377
Brennstoff-Chemie (West Germany) 1955, v. 36, 9 Feb, p. 33-37	319
Bystrodeystvuyushehaya Vychislitel'-naya Mashina M-2 1957, 228p.	B-2
*Byulleten' Eksperimental'noy Biologii i Meditsiny (USSR)	C-2
*Byulleten' Izobreteniy (USSR) 1958, no. 6, p. 5-152	C-2 347
Byulleten' Stantsiy Opticheskogo Nablyudeniya Iskusstvennykh Sputnikov Zemli (USSR) 1958, no. 1	342
Canadian Journal of Microbiology 1958, v. 4, no. 5, p. 543-550	300
Catalytic Pressure Hydrogenation of Coals, Tars, and Mineral Oils, Berlin/Gottingen/Heidelberg 1950, p. 92-97	334
Chemické Listy (Czechoslovakia) 1955, v. 49, p. 1442-1447	317
1956, v. 50, p. 2025	366
Chemiker Zeitung (East Germany) 1950, v. 74, no. 50, p. 745-749	374
Chemisch Weekblad (Netherlands) 1931, v. 28, no. 5, p. 82-86	313
1934, v. 31, p. 558-561	313
Chemische Berichte (Germany) 1926, v. 59 B, p. 1043-1048	315
1935, v. 68, no. 5, p. 769-775	319
Chimica e l'Industria (Italy) 1957, v. 39, p. 19-20	335
1958, v. 40, no. 11, p. 909-914	333
Congrès International de Médecine (no. 12) Comptes Rendus 1897, p. 21-24	295
Corrosion et Anticorrosion (France) 1957, v. 5, no. 5, p. 153-155	342
Derevoobrabatyvayushchaya Promyshlennost' (USSR) 1957, v. 6, no. 8, p. 11-14	351
1957, v. 6, no. 9, p. 14-15	351
Deutsche Farben-Zeitschrift (West Germany) 1958, v. 12, no. 2, p. 63-64	357
Deutsche Medizinische Wochenschrift (West Germany) 1957, v. 82, no. 26, p. 1050-1059	B-2
Deutsche Versuchsanstalt für Luftfahrt, e. V. Jahrbuch (Germany) 1930, p. 428-433 (Its Bericht 192.)	353
Dopolnitelnyy Spisok Dokladov na Vtoroy Vsesoyuznoy Konferentsii po Gasovoy Elektronike 1958, p. 1-3	B-1
Eksperimental'naya Khirurgiya (USSR) 1959, v. 4, no. 1, p. 6-11	311
*Elektrichestvo (USSR) 1955, no. 12, p. 9-18	C-2 348
*Elektrichestvo (USSR) (Con.) 1955, no. 12, p. 19-24	346
1956, no. 4, p. 65-67	340
1959, no. 1, p. 1-95	337
1959, no. 2, p. 78-84	B-4
Elektroprivod Samoletnykh Agregatov i Mekhanizmov 1958, p. 28-30, 41-43, 385-386	B-3
*Elektrosvyaz' (USSR) 1958, v. 12, p. 3-76	C-2 338
1959, v. 13, no. 2, p. 3-80	338
Elementy Aviatsionnykh Avtomaticheskikh Ustroystv 1958	B-3
Energetik (USSR) 1959, no. 3, p. 1-40	341
Energomashinostroyeniye (USSR) 1958, v. 4, no. 1, p. 27-30	345
1958, v. 4, no. 1, p. 47	346
1958, v. 4, no. 1, p. 48	345
*Entomologicheskoye Obozreniye (USSR)	C-2
Experientia (Switzerland) 1949, v. 5, no. 5, p. 200	315
1955, v. 11, no. 9, p. 365-368	317
Experimentelle Technik der Physik (Germany) 1955, v. 3, no. 2, p. 49-57	B-2
1956, v. 4, no. 2, p. 50-62	332
Farbe und Lack (West Germany) 1953, v. 59, no. 1, p. 7-16	357
1959, v. 65, no. 2, p. 72-75	357
il Farmaco Edizione Scientifica (Italy) 1957, v. 12, no. 2, p. 57-72	307
Farmacoterapia Actual (Spain) 1945, v. 2, no. 2, p. 313-318	296
*Farmakologiya i Toksikologiya (USSR)	C-2
Faserforschung und Textiltechnik (Germany) 1959, v. 10, no. 2, p. 62-67	356
Fertigungstechnik (Germany) 1956, v. 6, July, p. 321-322	356
Fette Seifen Anstrichmittel (West Germany) 1953, v. 55, no. 3, p. 170-173	313
1956, v. 58, no. 12, p. 1073-1076	335
*Fizika Metallov i Metallovedeniye (USSR) 1955, v. 1, no. 2, p. 251-260	C-2 360
1956, v. 2, no. 2, p. 339-350	365
1958, v. 6, no. 6, p. 961-1133	364
*Fizika Tverdogo Tela (USSR)	C-2
Fizika v Shkole (USSR) 1959, no. 2, p. 1-95	370
*Fiziologicheskiy Zhurnal SSSR	C-2
*Fiziologiya Rastenii (USSR)	C-3
Folha Medica (Brazil) 1955, v. 36, 5 Sep, p. 129ff	304
Forstwissenschaftliches Zentralblatt (Germany) 1952, v. 71, no. 11/12, p. 322-349	294
France en Tête de la Thermo-Propulsion avec le "Griffon II" 1959, p. 18-28	B-2
Frequenz (Germany) 1947, v. 1, no. 1, p. 2-15	341
1951, v. 5, no. 6, p. 145-155	375
1958, v. 12, no. 9, p. 273-284	339

Journal	Page
Geburtshilfe und Frauenheilkunde (Germany)	
1939, v. 1, Oct., p. 663-671	305
Geodeziya i Kartografiya (USSR)	
1958, no. 8, p. 3-7	B-1
1958, no. 8, p. 8-18	B-2
1958, no. 8, p. 19-21	B-5
1958, no. 8, p. 23-30	B-2
1958, no. 8, p. 40-43	B-3
1958, no. 8, p. 44-45	B-4
1958, no. 8, p. 46-48	B-5
1958, no. 8, p. 49-54	B-1
1958, no. 8, p. 55-58	B-5
1958, no. 8, p. 59-60	B-3
1958, no. 8, p. 68-73	B-2
1958, no. 8, p. 74-75	B-1
1958, no. 8, p. 76-79	B-1
1958, no. 11, p. 3-79	325
1958, no. 12, p. 3-74	325
1959, no. 1, p. 3-80	325
*Geokhimiya (USSR)	C-3
1958, no. 8, p. 695-765	326
1959, no. 1, p. 3-100	326
*Geologiya Nefti i Gaza (USSR)	C-3
Gidrotekhnicheskoye Stroitel'stvo (USSR)	
1959, v. 28, no. 3, p. 1-65	337
1959, v. 28, no. 4, p. 1-65	337
Gidrotekhnika i Melioratsiya (USSR)	
1959, no. 2, p. 3-64	291
1959, no. 3, p. 3-64	291
Giessereipraxis (Germany)	
1941, v. 61, no. 16, p. 213-217	365
Gornyy Zhurnal (USSR)	
1958, no. 1, p. 35-37	329
Gosudarstvennyy Nauchno-Issledovatel'-skiy Protivochumnyy Institut. Trudy (USSR)	
1947, v. 6	304
1949, v. 8	304
1956, v. 10 and 11	304
Gosudarstvennyy Nauchno-kontrol'nyy Institut Veterinarnykh Preparatov Trudy (USSR)	
1956, v. 6, p. 250-255	292
1956, v. 6, p. 262-264	293
1956, v. 6, p. 264-266	307
Grazhdanskaya Aviatsiya (USSR)	
1957, v. 14, Nov, p. 17-20	329
1958, v. 15, no. 1, p. 1-4	B-5
1958, v. 15, 2 Feb, p. 17-18	B-4
1958, v. 15, no. 7, p. 21-23	329
1959, v. 16, no. 2, p. 1	B-5
1959, v. 16, no. 2, p. 10-11	B-5
1959, v. 16, no. 2, p. 27-28	B-2
1959, v. 16, no. 2, p. 33-35	B-4
Gudok (USSR)	
1959, no. 38, p. 3	B-5
Gummi und Asbest (West Germany)	
1958, v. 11, no. 11, p. 682-694	358
GWF; das Gas- und Wasserfach (West Germany)	
1957, v. 98, no. 21, p. 517-524	335
1958, v. 99, no. 41, p. 1045-1054	335
Handbuch der Physik (Germany)	
1926, v. 10, p. 1-52	373
1933, p. 499-579. Sec. E. c omitted	370
Helium	
pub. 1949	320
Helvetica Chimica Acta (Switzerland)	
1956, v. 39, no. 16, p. 722-728	317
1959, v. 42, no. 3, p. 802-807	296
Hokkaido Regional Fisheries Research Lab. Bulletin (Japan)	
1958, no. 18, p. 11-22	309
Holzforschung (Germany)	
1958, v. 12, no. 3, p. 65-73	353
Hoppe-Seyler's Zeitschrift für Physiologische Chemie (Germany)	
1951, v. 288, no. 4/6, p. 200-215	297
Hua-Hsueh Kung-Yeh (Chinese People's Republic)	
1958, no. 5, p. 4-7, 16-17, 19-20, 25-32	331
Hua-pei-ch'u Tzu-jan Ti-li Tzu-liao, Peiping	
Dec 1957, p. 1-97, pt. 1	325
Dec 1957, p. 1-97, pt. 2	326
Dec 1957, p. 1-97, pt. 3	326
Hydraulic Presses	
p. 130-141	344
Industria Usoară (Rumania)	
1957, v. 4, no. 4, p. 172-175	354
Institute del Hierro y del Acero (Spain)	
1958, v. 11, Oct-Dec, p. 263-281	361
International Conference on Gas Turbines, Mons, Belgium	
June 4-6, 1958, 1959	345
International Congress on Glass no. 3, Venice	
7 Apr 53	354
Issledovaniya v Oblasti Metallovedeniya i Kontaktnoy Prochnosti Metallov	
1958, p. 92-119	B-2
Issledovaniye Splavov Tsvetnykh Metallov Sbornik I	
1955, p. 111-117	B-5
*Izmeritel'naya Tekhnika (USSR)	C-3
1959, no. 3, p. 1-64	377
Izvestiya Vysshikh Uchebnykh Zavedeny. Aviatsionnaya Tekhnika (USSR)	
1958, no. 4, p. 3-131	329
Izvestiya Vysshikh Uchebnykh Zavedeniy Geodeziya i Aerofotos" Yemka (USSR)	
1958, no. 4, p. 2-168	325
1958, no. 6, p. 2-171	325
Izvestiya Vysshikh Uchebnykh Zavedeniy. Khimiya i Khimicheskaya Tekhnologiya (USSR)	
1958, no. 4, p. 122-127	B-1
1958, no. 5, p. 3-163	330
Izvestiya Vysshikh Uchebnykh Zavedeniy. Neft' i Gaz (USSR)	
1958, no. 7, p. 11-15	323
1958, no. 8, p. 17-23	327
Izvestiya Vysshikh Uchebnykh Zavedeniy. Radiofizika (USSR)	
1958, v. 1, no. 2, p. 59-65	376
1958, v. 1, no. 3, p. 19-24	361
1958, v. 1, no. 3, p. 161-162	376
Izvestiya Vysshikh Uchebnykh Zavedeniy Tsvetnaya Metallurgiya (USSR)	
1958, no. 6, p. 115-125	B-1
1959, no. 1, p. 91-98	B-3
1959, no. 1, p. 59-66	B-5

Journal	Page
Jenaische Zeitschrift für Naturwissenschaft (Germany)	
1902, v. 43, p. 720-798	309
Journal für Praktische Chemie (East Germany)	
1958, ser. 4, v. 6, p. 103-114	334
Journal of Antibiotics (Japan) Series B	
1956, v. 9, p. 213-217	308
Journal of Inorganic & Nuclear Chemistry (Gt. Brit.)	
1958, v. 8, p. 612-619	335
Journal of Nuclear Energy (Gt. Brit.)	
1955, v. 2, no. 2, p. 110-111	320
Justus Liebigs Annalen der Chemie (West Germany)	
1888, v. 249, p. 1-53	316
1889, v. 250, p. 257-280	316
1928, v. 462, p. 267-277	317
1949, v. 562, no. 2, p. 75-109	336
1953, v. 584, no. 2/3, p. 156-176	321
1957, v. 606, no. 13, p. 1-13	322
K Nelineynoy Teori Sloistogo Polozhitelnogo Stolba	
1958, p. 1-7	B-1
Kagaku (Japan)	
1952, v. 22, no. 2, p. 96	325
Kagaku Kogaku (Japan)	
1958, v. 22, p. 476-482	323
*Kauchuk i Rezina (USSR)	C-3
*Kemisk Maanedsblad og Nordisk Handelsblad for Kemisk Industri (Scandinavia)	C-3
Khimicheskaya Nauka i Promyshlennost' (USSR)	
1957, v. 2, no. 2, p. 238-245	B-3
1958, v. 3, no. 6, p. 803-807	B-3
Khimiko-Tekhnologicheskiy Institut, Kazan. Trudy (USSR)	
1951, no. 16, p. 3-10	312
Khimiya i Tekhnologiya Topliv i Masel (USSR)	
1959, v. 4, no. 1, p. 5-15	B-5
Kislorod (USSR)	
1958, v. 11, no. 5, p. 1-73	330
1958, v. 11, no. 6, p. 1-45	330
Klepzig's Textil-Zeitschrift (East Germany)	
1956, v. 58, no. 13, p. 516-518	357
Klinicheskaya Meditsina (USSR)	
1959, v. 37, no. 1, p. 12-18	305
Klinische Medizin (Austris)	
1949, v. 4, p. 517-522	307
Klinische Wochenschrift (Germany)	
1955, v. 33, no. 15/16, p. 372-378	302
K'o-hsueh Ch'u-pan-she, Peiping	
1956, 159p.	326
K'o hsueh T'ung pao (Chinese People's Republic)	
1956, March, p. 37-41	339
1957, no. 4, p. 110	369
1957, no. 9, p. 279-280	339
1958, no. 14, p. 441-443, 445-447	327
1958, no. 18, p. 555-556	340
1959, no. 1, p. 4-7	347
Kobunshi Kagaku (Japan)	
1957, v. 14, no. 144, p. 176-183	370
Kobunshi Kagaku (Japan) (Con.)	
1957, v. 14, no. 144, p. 191-195	336
1957, v. 14, no. 147, p. 363-366	336
1957, v. 14, no. 150, p. 488-495	357
1958, v. 15, no. 162, p. 647-653	357
Kobutsu Shigen; Futsu-in Shigen Chosa-dan, Hokoku (Japan)	
1944, v. 2, p5. 1, p. 13-17, 381-388, 431-438	326
Koks i Khimiya (USSR)	
1959, no. 1, p. 3-64	364
Kolebaniya Upragikh Sistem s Uchetom Rasseyaniya Energii v Materiale 1955	B-4
Kolloid-Gesellschaft. Verhandlungs-berichte (West Germany)	
1958, v. 18, p. 122-131	358
Kolloid Zietschrift (West Germany)	
1958, v. 156, p. 122-132	358
*Kolloidnyy Zhurnal (USSR)	C-3
1955, v. 17, no. 3, p. 171-172	319
1957, v. 19, no. 3, p. 311-318	361
1958, v. 21, no. 1, p. 3-135	318
Kontrol' Katchestva Produktsii v Mashinostroyenii, Moscow	
1955, p. 1-205 and 551-633	344
Krasnaya Zvezda (USSR)	
1959, no. 90, p. 1	B-1
1959, no. 93	B-5
Kridla Vlasti (Czechoslovakia)	
1959, no. 9, p. 14-15	B-2
*Kristallografiya (USSR)	C-3
1958, v. 3, no. 4, p. 444-451	374
1958, v. 3, no. 6, p. 655-772	372
Kryl'ya Rodiny (USSR)	
1958, no. 7, p. 18-20	363
1959, no. 4, p. 20-21	B-1
Kunststoffe (West Germany)	
1947, v. 37, no. 2/3, p. 36-38	354
1957, v. 47, no. 8, p. 409-412	353
Kvasny Prumysl (Czechoslovakia)	343
Laboratornoye Delo' (USSR)	
1958, v. 13, no. 3, p. 24-30	314
Leningrad U. Vestnik (USSR) Seriya Matematiki, Mekhaniki i Astronomii, no. 4.	
1958, no. 19, p. 5-208	359
Liteynoye Proizvodstvo (USSR)	
1959, no. 2, p. 42	368
Makromolekulare Chemie (Switzerland)	
1955, v. 16, no. 1, p. 71-73	319
1957, v. 24, no. 1	318
1957, v. 25, no. 3, p. 159-175	315
Mashinostroitel'	
1958, no. 6, p. 43-44	346
1959, no. 2, p. 1-48	347
1959, no. 3, p. 1-48	347
Masla dlya Gazoturbinnykh Dvigateley (Smazochnnyye Masla dlya Aviatsion-nykh Gazoturbinnykh Dvigateley)	
1958, Chap. 4, p. 44-82	B-4
Masloboyno-Zhirovaya Promyshlennost' (USSR)	
1958, v. 24, no. 8, p. 10-12	313
Matematicheskiy Sbornik (USSR)	
1958, v. 46, no. 4, p. 373-454	359
1959, v. 47, no. 1, p. 3-143	359

Journal	Page
Materialy po Biologii Morskovo Perioda Zhizni Dalnevostochnykh Lososey, Moscow	
1957, p. 64-75	309
1958, p. 3-7	310
1958, p. 8-30	311
1958, p. 31-51	309
1958, p. 52-63	309
1958, p. 76-86	328
Medicina; Revista Mexicana	
1952, v. 32, June, p. 278-282	305
Medicina y Seguridad del Trabajo (Spain)	
1955, v. 3, Apr-June, p. 75-81	301
Meditsinskaya Parazitologiya i Parazitarnyye Bolezni (USSR)	
1945, v. 14, no. 1, p. 12-18	299
1957, v. 26, no. 1, Suppl. p. 56	299
Medizinische Monatschrift (West Germany)	
1956, v. 10, no. 10, p. 672-674	304
Mekhanizatsiya i Avtomatizatsiya Proizvodstva (USSR)	
1959, no. 1, p. 3-64	347
Metalloberflache (West Germany)	
1958, v. 12, p. 150-151	348
*Metallovedeniye i Termicheskaya Obrabotka Metallov (USSR)	C-3
1958, no. 1, p. 26-29	350
1958, no. 10, p. 17-22	336
1958, no. 10, p. 28-33	346
1958, no. 12, p. 10-16	365
1958, no. 12, p. 35-41	365
1958, no. 12, p. 53-56	351
1958, no. 12, p. 56-57	360
1958, no. 12, p. 58-61	364
1959, no. 1, p. 2-61, and 64	364
*Metallurg (USSR)	C-3
Metallurgie und Giessereitechnik (Germany)	
1952, no. 1, p. 14-17	349
1952, no. 1, p. 17-18	351
Metallwirtschaft, Metallwissenschaft Metalltechnik (Germany)	
1931, v. 10, 6 Feb, p. 105-111	367
Métaux (Corrosion-Industries) (France)	
1955, v. 30, Dec, p. 476-483	365
Meteorologiya i Gidrologiya (USSR)	
1956, no. 8, p. 23-26	325
1957, no. 1, p. 37-41	324
1957, no. 3, p. 37-40	324
1957, no. 4, p. 28-30	325
1959, no. 1, p. 3-70	324
*Mikrobiologiya (USSR)	C-3
1954, v. 23, no. 5, p. 551-560	327
Mikrokosmos (West Germany)	
1956, v. 45, p. 103-105	373
Minerva Medica (Italy)	
1958, v. 49, no. 100, p. 4726-4730	302
Moscow U. Vestnik. Seriya Fiziko-matematicheskikh i Yestestvennykh Nauk (USSR)	
1955, v. 10, no. 12, p. 119-120	316
1958, v. 13, no. 1, p. 3-239	370
1958, v. 13, no. 2, p. 3-253	370
1958, v. 13, no. 3, p. 3-237	370
1958, v. 13, no. 4, p. 3-238	370
1958, v. 13, no. 5, p. 3-216	370
Moskovskoye Obshchestvo Ispytateley Prirody. Byulleten'. Otdel Biologicheskiy (USSR)	
1957, v. 62, no. 6, p. 25-29	299
Münchener Medizinische Wochenschrift (West Germany)	
1958, v. 100, no. 1, p. 16-23	307
1958, v. 100, no. 50, p. 1974-1976	305
Na "YAK-18a" po Krugu	
source and date unknown	B-3
die Naturwissenschaften (Germany)	
1957, v. 44, no. 14, p. 399-400	307
Nauchnyye Doklady Vysshey Shkoly. Fiziko-matematicheskiye Nauki (USSR)	
1958, no. 1, p. 84-88	376
Nauchnyye Doklady Vysshey Shkoly. Khimiya i Khimicheskaya Technologiya (USSR)	
1958, no. 3, p. 405-606	330
1958, no. 4, p. 676-679	B-3
Nauchnyye Doklady Shkoly. Mashinostroyeniye i Priborostroyeniye (USSR)	
1958, no. 2, p. 7-14	B-2
1958, no. 2, p. 15-18	B-4
1958, no. 2, p. 100-107	B-4
1958, no. 3, p. 122-131	B-1
Nauchnyye Doklady Vysshey Shkoly. Metallurgiya (USSR)	
1959, no. 1, p. 3-264	364
Nauchnyye Doklady Vysshey Shkoly. Radiotekhnika i Elektronika (USSR)	
1958, no. 2, p. 13-19	340
Nauka i Zhizn' (USSR)	
1956, v. 23, no. 7, p. 13-16	345
1956, v. 23, no. 7, p. 20	344
1959, v. 26, no. 2, p. 1-80	377
Nederlands Tijdschrift voor Geneeskunde	
1958, v. 102, no. 38, p. 1851-1852	308
Nederlands Tijdschrift voor Natuurkunde	
1943, v. 10, no. 1, p. 1-16	341
Neftyanoye Khozyaystvo (USSR)	
1956, no. 4, p. 15-22	346
1957, v. 35, no. 7, p. 35-38	326
Nekotorye Dinamicheskie Zadachi Teorii Obolochek. Moscow	
1957. pp	B-4
Neue Hütte (East Germany)	
1958, v. 3, no. 8, p. 462-474	350
Nihon Kagaku Zasshi (Japan)	
1949, v. 70, no. 1/2, p. 24-30	333
1954, v. 75, no. 3, p. 309-311	315
1955, v. 76, no. 6, p. 687-691	317
1955, v. 76, no. 12, p. 1339-1345	313
1958, v. 79, no. 2, p. 135-137	335
1958, v. 79, no. 2, p. 138-142	335
Nihon Keizai Shimbun (Japan)	
1957, 25 Nov.	369
Nihon Nogei-Kagakkai Shi (Japan)	
1956, v. 30, p. 419-422	300
1956, v. 30, p. 423-426	300
Nihon Saikingaku Zasshi (Japan)	
1956, v. 11, no. 9, p. 803-812	301
Novyye Modifikatsiy Sportivnykh Samoletov	
source and date unknown	B-5
Oberflachentechnik (Germany)	
1940, v. 17, no. 1, p. 4-6	343

Journal	Page
Ogneupory (USSR)	
1956, v. 21, no. 5, p. 207-211	355
1957, v. 22, no. 12, p. 562-566	354
1958, v. 23, no. 7, p. 303-307	355
1959, v. 24, no. 1, p. 1-48	354
1959, v. 24, no. 2, p. 49-96	354
1959, v. 24, no. 3, p. 97-144	354
*Optika i Spektroskopiya (USSR)	C-3
1957, v. 2, no. 2, p. 220-228	374
1958, v. 4, no. 5, p. 696-697	374
1959, v. 6, no. 2, p. 129-272	372
1959, v. 6, no. 3, p. 273-428	372
1959, v. 6, no. 4, p. 429-572	372
Österreichische Chemiker-Zeitung (Austria)	
1927, Neue Folge, v. 30, no. 1, p. 1-5	336
Oyô Butsuri (Japan)	
1956, v. 25, no. 10, p. 389-395	316
1956, v. 25, no. 12, p. 475-479	316
1958, v. 27, no. 10, p. 585-590	370
Paperi ja Puu (Finland)	
1958, v. 40, no. 11, p. 561-568	358
Patent (Belgium)	
569 481	318
Patent (Germany)	
503 766	346
841 359	357
AS 1 012 594	330
AS 1 014 094	315
AS 1 023 227	330
AS 1 034 167	330
AS 1 034 184	330
AS 1 035 113	367
AS 1 047 180	372
AS 1 048 918	331
AS 1 050 743	331
Patent application (Germany)	
B 35 499	331
B 40 284	315
B 43 227	330
B 46 704	331
C 7902 (suppl)	330
C 13 031	330
C 14 489	331
F 15 622	330
N 12 844	367
R 20 212	330
W 23 076	372
Patent application (Japan)	
2915	335
3406	335
Planseeberichte für Pulvermetallurgie (Austria)	
1956, v. 4, no. 1, p. 2-6	364
*Pochvovedeniye (USSR)	C-3
Poroshkovaya Metallurigya	
1958, p. 89-97, 125-136, 154-157	B-5
*Priborostroyeniye (USSR)	C-3
1958, no. 10, p. 1-33	347
1958, no. 11, p. 1-32	347
1959, no. 2, p. 1-35	347
*Pribory i Tekhnika Eksperimenta (USSR)	C-3
1958, no. 2, p. 103-104	341
1958, no. 4, p. 37-39	369
1959, no. 1, p. 121-125	B-4

Journal	Page
Prikladnaya Geofizika (USSR)	
1957, no. 17, p. 33-66	327
*Prikladnaya Matematika i Mekhanika (USSR)	C-3
1952, v. 16, no. 1, p. 116	363
1954, v. 18, no. 6, p. 667-674	362
1956, v. 20, no. 1, p. 67-72	363
1957, v. 21, no. 1, p. 3-14	361
1957, v. 21, no. 6, p. 815-822	361
1958, v. 22, no. 4, p. 426-576	359
Primeneniye Vakuuma v Metallurgii, Moscow	
1858, p. 14-34	349
Priroda (USSR)	
1957, v. 46, no. 3, p. 31-37	368
1958, Aug, p. 50-55	B-2
Problemy Artiki (USSR)	
1958, no. 3, p. 53-59	371
Problemy Endokrinologii i Goemonoterapii (USSR)	
1955, v. 1, no. 1, p. 71-77	295
*Problemy Gematologii i Perelivaniya Krovi (USSR)	C-3
Professional'no-Tekhnicheskoye Obrazovaniye (USSR)	
1959, no. 2, p. 1-32	295
Promyshlennaya Energetika (USSR)	
1958, v. 13, no. 12, p. 1-40	338
Promyshlenno-Ekonomicheskaya Gazeta (USSR)	
1959, 9 May, p. 4	B-1
Przeglad Elektrotechniczny (Poland)	
1958, v. 34, no. 2/3, p. 89-92	339
1958, v. 34, no. 2/3, p. 121-127	340
1958, v. 34, no. 2/3, p. 128-133	339
1958, v. 34, no. 2/3, p. 133-136	341
1958, v. 34, no. 2/3, p. 140-150	352
1958, v. 34, no. 2/3, p. 150-157	355
1958, v. 34, no. 2/3, p. 163-170	356
1958, v. 34, no. 2/3, p. 170-176	356
1958, v. 34, no. 2/3, p. 176-188	376
1958, v. 34, no. 2/3, p. 188-192	341
Raboty po Mashinnomu Perevodu s Inostrannykh Yazykov na Russkiy i s Russkogo na Inostrannyye v Sovetskom Soyuze, Moscow	
1958	378
Radio, Moscow (USSR)	
1953, no. 1, p. 17-19	324
1956, no. 2, p. 23	B-5
1956, no. 9, p. 13-14	B-2
1958, no. 11, p. 17	339
1958, no. 12, p. 1-64	338
1959, no. 1, p. 1-64	338
1959, no. 2, p. 6-7	342
1959, no. 4, p. 32-33	342
*Radiotekhnika (USSR)	C-3
*Radiotekhnika i Elektronika (USSR)	C-3
1958, v. 3, no. 12, p. 1495-1500	340
1959, v. 4, no. 1, p. 3-149	338
1959, v. 4, no. 2, p. 155-348	338
Razvedka i Okhrana Nedr (USSR)	
1959, v. 25, no. 2, p. 1-63	329
Referativnyy Zhurnal. Biologiya (USSR)	
1958, no. 7	300
1958, no. 9	293

Journal	Page
Referativnyy Zhurnal. Biologiya (USSR) (Con.)	
1958, no. 10	292
1958, no. 10	293
1958, no. 12	295
1958, no. 12	309
1958, no. 13	301
1958, no. 15	293
1958, no. 16	292
1958, no. 16	293
1958, no. 16	298
1958, no. 16	299
1958, no. 18	299
1958, no. 18	309
1958, no. 19	294
1958, no. 20	298
1958, no. 20	299
1958, no. 20	306
1958, no. 21	294
1958, no. 21	295
1958, no. 21	298
1958, no. 21	299
1958, no. 21	301
1958, no. 21	306
1958, no. 21	309
1958, no. 22	292
1958, no. 22	295
1958, no. 23	306
1959, no. 1	292
Referativnyy Zhurnal Elektrotekhnika (USSR)	
1958, no. 3, p. 7-159	338
Referativnyy Zhurnal. Fizika (USSR)	
1959, no. 3	370
1959, no. 4	370
*Referativnyy Zhurnal. Geologiya (USSR)	C-4
Referativnyy Zhurnal. Khimiya (USSR)	
1958, no. 15	315
1959, no. 2, Abstracts 4217-4533	311
1959, no. 2, Abstracts 4912-7027	311
1959, no. 4	315
1959, no. 4	318
Referativnyy Zhurnal. Mekhanika (USSR)	
1957, no. 9, p. 1-174	360
1958, no. 2, p. 40-108	360
*Referativnyy Zhurnal. Metallurgiya (USSR)	C-4
1958, no. 1	363
1958, no. 11	364
Revista Brasileira de Malariologia e Doenças Tropicais	
1956, v. 8, no. 2, p. 397-404	304
1956, v. 8, no. 3, p. 527-534	304
1956, v. 8, no. 4, p. 583-587	301
1956, v. 8, no. 4, p. 589-597	304
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1958, v. 15, no. 8, p. 547-550	303
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la Revue Lyonnaise de Médecine (France)	
1955, v. 4, p. 93-100	302
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1951, v. 76, Aug/Sep p. 408-410	303

Journal	Page
Revue Médicale du Moyen-Orient (Lebanon)	
1958, v. 15, no. 32, p. 195-208	305
Revue Universelle des Mines (France)	
1945, 15 Spe, p. 122-128	350
Les Rickettsioses du Congo Belge et du Ruanda-Urundi, Louvain	
1951	303
la Rivista dei Combustibili (Italy)	
1958, v. 12, no. 6, p. 474-493	356
Roczniki Chemii (Poland)	
1956, v. 30, no. 1, p. 29-38	320
Russa (France)	
1934, v. 9, p. 419ff	316
Rybnoye Khozyaystvo (USSR)	
1958, v. 34, no. 7, p. 22-24	308
Samolet "Komsomolets",	
p. 14-15	B-1
Sbornik Chekhoslovatskykh Khimicheskykh Rabot (Czechoslovakie)	
1957, v. 22, Feb, p. 189-194	314
1957, v. 22, Feb, p. 230-235	312
1957, v. 22, p. 235-241	312
Schweizerische Zeitschrift für Tuberkulose und Pneumonologie	
1958, v. 15, no. 4, p. 198-201	305
Scientific Information rept.	
19 June 59, 121p.	377
3 July 59	377
Seikagaku (Japan)	
1957, v. 29, no. 5, p. 290-293	297
1958, v. 30, no. 6, p. 446-448	297
1958, v. 30, no. 6, p. 449-452	297
Semaine des Hôpitaux de Paris (France)	
1957, v. 33, no. 51/52, p. 3043-3044	305
Sessiya Akademiya Nauk SSSR po Nauchnym Problemam Avtomatizatsii Proizvodstva	
15-20 Oct 56, v. 6, p. 149-167	346
Silikat Technik (East Germany)	
1957, v. 8, no. 1, p. 24-27	353
1959, v. 10, no. 3, p. 105-118	B-3
1959, v. 10, no. 3, p. 119-122	B-2
Silikony (Organokremicite Slouceniny, Jejich Priprava, Vlastnosti a Pouziti)	
1954	B-1
Skrzydlata Polska (Poland)	
1959, v. 15, no. 18, p. 8-9	B-1
1959, v. 15, no. 18, p. 13	B-1
Société Chimique de Belgique. Bulletin	
1957, v. 66, no. 1/2, p. 5-25	316
Société Chimique de France. Bulletin	
1892, v. 7, no. 3, p. 791-793	315
1948, nos. 9/10, p. 963-968	317
Société de Biologie et de ses Filiales. Comptes Rendus des Séances (France)	
1928, v. 99, p. 805-810	343
Société des Américanistes de Paris. Journal (France)	
1950, N. S., v. 39, p. 187-218	372
Sovetskaya Arkheologiya (USSR)	
1956, v. 25, p. 64-86	326
Sovetskaya Aviatsiya (USSR)	
1958, no. 183, p. 3	B-5
1958, no. 228, p. 2	329
1959, no. 65, p. 3	B-3
1959, no. 67, p. 2	B-5

Journal	Page
Sovetskaya Aviatsiya (USSR) (Con.)	
1959, no. 72, p. 2	B-3
1959, no. 86, p. 4	B-4
1959, no. 90, p. 3	B-3
1959, no. 107, p. 1	B-1
1959, no. 112, p. 1	B-4
1959, no. 119, p. 2	B-3
1959, no. 126, p. 2	B-3
1959, no. 126, p. 4	B-5
1959, no. 127, p. 2	B-2
Sovetskaya Geologiya; Sbornik Statei (USSR)	
1958, no. 4, p. 53-72	327
Sovetskaya Meditsina (USSR)	
1958, v. 22, no. 2, p. 109-112	307
*Sovetskaya Pedagogika (USSR)	C-4
Soviet Civil Defense Posters pub. by DOSAAF, Moscow	
1957	342
Soviet Science and Technology	
1959, v. 3, no. 1	291
Sovremennaya Voyennaya Tekhnika	
1956, p. 1-97, 108-133, 145-149, 158-211, 222-246, 263-273	B-1
Spectrochimica Acta (Gt. Brit.)	
1950, v. 4, p. 85-92	313
1954, v. 6, p. 288-301	313
Stahl und Eisen (Germany)	
1924, v. 44, 18 Dec, p. 1687-1694	349
1956, v. 76, 1 Nov, p. 1453-1456	351
1957, v. 77, 10 Jan, p. 15-23	352
1958, v. 78, no. 1, p. 40-46	367
1958, v. 78, 21 Aug, p. 119-1200	352
1958, v. 78, 13 Nov, p. 1670-1676	350
1958, v. 78, no. 25, p. 1832-1834	349
1958, v. 78, 25 Dec, p. 1881-1891	368
1959, v. 79, 8 Jan, p. 8-17	350
1959, v. 79, 8 Jan, p. 23-32	348
1959, v. 79, 22 Jan, p. 80-88	351
1959, v. 79, 22 Jan, p. 89-94	350
1959, v. 79, 5 Feb, p. 135-137	320
1959, v. 79, 5 Feb, p. 137-141	321
1959, v. 79, no. 5, p. 272-276	334
1959, v. 79, 5 Mar, p. 291-294	337
1959, v. 79, 19 Mar, p. 356-361	357
1959, v. 79, no. 7, p. 405-407	332
1959, v. 79, no. 7, p. 408-410	350
1959, v. 79, no. 7, p. 410-414	332
1959, v. 79, no. 7, p. 414-419	333
1959, v. 79, no. 8, p. 472-477	336
*Stal' (USSR)	C-4
1958, v. 18, no. 2, p. 126-130	355
1958, v. 18, no. 7, p. 617-620	364
1958, v. 18, no. 11, p. 983-987	348
1958, v. 18, no. 12, p. 1095-1102	350
1959, v. 19, no. 4, p. 289-383	365
*Stanki i Instrument (USSR)	C-4
1956, v. 27, no. 6, p. 36-37	344
1956, v. 27, no. 12, p. 9-12	348
*Steklo i Keramika (USSR)	C-4
1958, no. 3, p. 13-16	B-2
1958, no. 12, p. 1-48	354
Studien uber die Schwimmblase Biniger Gadiden und Macruriden, Lund U.	
1921, p. 24-28	309
Sudostroyeniye (USSR)	
1957, no. 6, p. 18-21	329
Sumitomo Metals (Japan)	
1957, v. 9, July, p. 143-157	351
*Svarochnoye Proizvodstvo (USSR)	C-4
1957, no. 9, p. 19-23	351
1959, no. 3, p. 1-48	347
Svensk Pappers-tidning (Sweden)	
1958, v. 61, no. 14, p. 445-453	359
Technologie der Zinklegeirungen, Berlin	
1937	333
le Tecnetron, France	
1958	341
Teion Kagaku. Series B. (Japan)	
1956, no. 14	369
Tekhnika Kino i Televideniya (USSR)	
1958, no. 9, p. 10-19	378
Tekhnika Molodezhi (USSR)	
1958, v. 26, no. 12, p. 1-38	329
Tekhnologichnost' Konstruktsiy Stankov, Moscow	
1955, p. 1-316	349
Teknisk Tidskrift (Sweden)	
1945, 10 Mar, p. 271-275	355
Teleteknik. Danish Ed. (Denmark)	
1957, v. 8, no. 3-4, p. 171-175	378
Teoriya Osobykh Vidov Litya	
1958, p. 15-142	B-5
*Teoriya Veroyatnostey i Yeye Primeneniye (USSR)	C-4
1958, v. 3, no. 1, p. 217-360	359
Teploenergetika (USSR)	
1958, v. 6, no. 2, p. 3-96	342
1959, v. 6, no. 3, p. 3-96	342
Teploperedacha i Teplovoye Modelirovaniye	
1959	B-3
Tetsu to Hagane (Japan)	
1957, v. 43, July, p. 695-699	349
1957, v. 43, July, p. 699-703	349
Tikhookeanskiy Nauchno-issledovatel'skiy Institut Rybnogo Khozyaystva i Okeanografii. Izvestiya (USSR)	
1957, v. 45, p. 29-35	310
1957, v. 45, p. 199-201	309
1957, v. 45, p. 201-202	310
1957, v. 45, p. 203-205	310
Ti-Li Hsueh-pao (Chinese People's Republic)	
1954, v. 20, no. 3, p. 255-266	327
1957, v. 23, no. 3, p. 235-242	327
Translations Service Accesions	
3 Apr 59	291
Transportation, Communications, and Electric Power in the USSR	
26 May 59, no. 16	353
29 June 59, no. 17	353
*Tsement (USSR)	C-4
1957, v. 23, no. 6, p. 11-15	372
1959, v. 25, no. 1, p. 1-32	337
Tsvetnyye Metally (USSR)	
1958, v. 31, Sep, p. 58-61	351
1959, v. 32, no. 1, p. 1-103	367
1959, v. 32, no. 2, p. 58-59	B-4
der Tuberkulosearzt (West Germany)	
1957, v. 11, no. 9, p. 1-6	302

Journal	Page
Ukrayins'kyy Fizychnyy Zhurnal (USSR)	
1958, v. 3, no. 6, p. 788-794	B-3
1958, v. 3, no. 6, p. 802-814	B-2
Ukrainskiy Matematicheskiy Zhurnal (USSR)	
1958, v. 10, no. 4, p. 351-466	359
*Uspekhi Fizicheskikh Nauk (USSR)	C-4
1957, v. 61, no. 4, p. 461-490	368
1957, v. 62, no. 3, p. 201ff	375
1958, v. 66, no. 1, p. 141-144	371
1958, v. 66, no. 3, p. 353-542	375
1959, v. 67, no. 3, p. 377-548	375
Uspekhi Khimii (USSR)	
1958, v. 27, no. 12, p. 1361-1517	312
1959, v. 28, no. 2, p. 180-217	B-4
Uspekhi Matematicheskikh Nauk (USSR)	
1958, v. 13, no. 5, p. 3-241	359
USSR Electronic and Precision Equipment	
14 May 59, no. 9	338
5 June 59, no. 10	347
1 July 59, no. 11	338
USSR Industrial Equipment (Transportation Construction, Production, and Power Machinery)	
28 May 59, no. 10	344
25 June 59, no. 11	344
USSR Materials and Materials Processing Equipment	
18 May 59, no. 9	353
23 June 59, no. 10	332
10 July 59, no. 11	332
Vakuum-Technik (Germany)	
1955, v. 4, no. 3, p. 51-64	349
VDI Berichte (West Germany)	
1957, v. 20, p. 117-121	347
Verres et Refractaires (France)	
1948, v. 2, no. 4, p. 211-221	355
1951, v. 5, no. 5, p. 247-260	354
Vestnik Elektropromyshlennosti (USSR)	
1958, v. 29, no. 1, p. 32-34	340
1958, v. 29, no. 6, p. 77-80	341
1959, v. 30, no. 2, p. 1-80	339
*Vestnik Mashinostroyeniya (USSR)	C-4
1956, v. 36, no. 7, p. 42-45	352
1957, v. 37, no. 12, p. 71-75	348
1958, v. 38, no. 7, p. 3-91	347
1959, v. 39, no. 3, p. 3-88	347
Vestnik Svyazi (USSR)	
1959, no. 3, p. 1-42	339
1959, no. 4, p. 1-32	339
Veterinariya (USSR)	
1939, v. 16, no. 5, p. 45-46	299
1958, v. 35, no. 12, p. 59-60	343
1959, v. 36, no. 2, p. 11-13	292
1959, v. 36, no. 2, p. 28-34	292
1959, v. 36, no. 2, p. 41	292
1959, v. 36, no. 2, p. 48-51	293
1959, v. 36, no. 2, p. 51-55	295
1959, v. 36, no. 2, p. 55-56	292
1959, v. 36, no. 2, p. 57-62	292
1959, v. 36, no. 3, p. 91	306
Vliianie Vneshnikh Yslovii na Formy Rosta Kristallov. Trudy, Kristallo Leningrad	
1955, no. 4, pp. 3-46	B-3
Vnutrizavodskoye Planirovaniye i Tekhpromfinplan Promyshlennogo Predpriyatiya (Seriya III)	
1958	B-4
*Voprosy Ekonomiki (USSR)	C-4
Voprosy Ikhtiologii (USSR)	
1958, v. 9, no. 10, p. 3-11	310
*Voprosy Onkologii (USSR)	C-4
*Voprosy Virusologii (USSR)	C-4
Vvedeniye v Dinamiku Avtomaticheskogo Regulirovaniya Elektricheskikh Mashin, Moscow	
1956	344
Vvedeniye v Raketnuyu Tekhniku, Moscow	
1956	345
Vvedeniye v Teoriyu Kvantovannykh Poley, Moscow	
1957	375
Werkstatt und Betrieb (Germany)	
1935, v. 68, 10 Oct, p. 257-259	351
1958, v. 91, no. 10, p. 605-608	349
1958, v. 91, no. 10, p. 625-629	349
Yakugaku Zasshi (Japan)	
1939, v. 59, p. 18-28	316
1954, v. 74, p. 742-746	336
1957, v. 77, no. 4, p. 441-442	318
Yezhegodnik Bolshoy Sovetskoy Entsiklopediy	
1958, p. 543-549	B-1
Yuki no Kessho no Shoka Henkei ni Tsuite no Teiryo-teki Kosatsu	375
Zatverdevaniye Metallov	
1958, p. 231-242, 299-309, 374-396	B-2
*Zavodskaya Laboratoriya (USSR)	C-4
1956, v. 22, no. 3, p. 329-331	362
1956, v. 22, no. 10, p. 1182-1185	367
1957, v. 23, no. 4, p. 485-487	367
1957, v. 23, no. 6, p. 679-682	368
1958, v. 24, no. 5, p. 629-631	360
1959, v. 25, no. 1, p. 3-128	364
1959, v. 25, no. 3, p. 259-384	364
Zeitschrfit für Analytische Chemie (West Germany)	
1957, v. 159, no. 2, p. 81-94	312
Zeitschrift für Angewandte Mathematik und Mechanik (Germany)	
1954, v. 34, no. 8/9, p. 344-357	362
1955, v. 35, no. 3, p. 81-88	346
Zeitschrift für Angewandte Physik (Germany)	
1948, v. 1, no. 2, p. 90-98	B-3
Zeitschrift für die Gesamte Experimentelle Medizin (Germany)	
1923, v. 31, p. 215-220	297
1924, v. 43, p. 270-280	296
Zeitschrift für Elektrochemie (Germany)	
1932, v. 38, no. 8a, p. 549-553	372
Zeitschrift für Erzbergbau und Metallhüttenwesen (West Germany)	
1954, v. 7, June, p. 229-234	312
Zeitschrift für Flugwissenschaften (West Germany)	
1956, v. 4, no. 3/4, p. 95-108	362
Zeitschrift für Physik (Germany)	
1948, v. 124, p. 628-657	362
1955, v. 141, no. 4, p. 463-475	369

Journal	Page
Zeitschrift für Untersuchung der Lebensmittel (Germany)	
1930, v. 60, no. 5, p. 473-484	343
Zeitschrift für Wissenschaftliche Photographie, Photophysik und Photochemie (East Germany)	
1950, v. 45, no. 10-12, p. 222-226	321
Zement-Kalk-Gips (West Germany)	
1957, v. 10, no. 10, p. 409-413	345
1958, v. 11, no. 3, p. 92-94	345
1958, v. 11, no. 7, p. 298-304	344
Zentralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten (East Germany)	
1892, v. 12, p. 859-861	306
1894, v. 16, p. 175-180	301
1956, v. 109, p. 516-523	
Zentralblatt für Chirurgie (East Germany)	
1955, v. 80, no. 50, p. 1987-1991	303
Zentralblatt für Gewerbehygiene und Unfallverhutung (Germany)	
1927, v. 4, p. 312-316	308
Zentralblatt für Gynakologie (Germany)	
1937, v. 61, 27 Feb, p. 516-524	303
*Zhurnal Analiticheskoy Khimii (USSR)	C-4
1959, v. 14, no. 1, p. 4-144	312
*Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (USSR)	C-4
1937, v. 7, no. 12, p. 1457-1462	371
1948, v. 18, no. 2, p. 210-218	373
1958, v. 34, no. 3, p. 537-782	370
1958, v. 35, no. 4, p. 833-1064	370
1959, v. 36, no. 1, p. 3-344	370
1959, v. 36, no. 3, p. 649-966	370
Zhurnal Fizicheskoy Khimii (USSR)	
1940, v. 14, p. 349-356	322
1957, v. 31, no. 7, p. 1532-1541	294
1958, v. 32, no. 6, p. 1214-1217	328
1958, v. 32, no. 8, p. 1859-1862	319
1958, v. 32, no. 12, p. 2657-2849	319
1958, v. 32, no. 12, p. 2989-2980	321
1959, v. 33, no. 1, p. 3-237	319
*Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR)	C-4
1957, v. 28, no. 4, p. 37-38	306
1959, v. 30, no. 4, p. 79-92	308

Journal	Page
Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR)	
1959, v. 4, no. 2, p. 81-160	353
*Zhurnal Neorganicheskoy Khimii (USSR)	C-4
1956, v. 1, no. 8, p. 1703-1712	314
1956, v. 1, no. 9, p. 2118-2130	355
1956, v. 1, no. 12, p. 2749-2752	314
1957, v. 3, no. 7, p. 1715-1716	B-2
1958, v. 3, no. 5, p. 1071-1074	314
1958, v. 3, no. 7, p. 1487-1489	B-3
1958, v. 3, no. 8, p. 1731-1733	B-4
1958, v. 3, no. 10, p. 2236-2239	374
1958, v. 3, no. 10, p. 2244-2252	375
1958, v. 3, no. 10, p. 2366-2374	B-4
*Zhurnal Obshchey Khimii (USSR)	C-4
1915, v. 47, p. 1374-1401	358
1915, v. 47, p. 1509-1528	317
1944, v. 14, no. 6, p. 420-427	321
1945, v. 15, no. 4/5, p. 353-357	316
1946, v. 16, p. 1505-1520	323
1953, v. 23, no. 3, p. 392-396	318
1958, v. 28, no. 1, p. 267-272	333
1958, v. 28, no. 7, p. 1901-1904	306
1958, v. 28, no. 11, p. 2909-3154	312
*Zhurnal Prikladnoy Khimii (USSR)	C-5
1951, v. 24, no. 5, p. 460-470	321
*Zhurnal Tekhnicheskoy Fiziki (USSR)	C-5
1951, v. 21, p. 448-452	376
1956, v. 26, no. 8, p. 1723-1729	321
1956, v. 26, no. 10, p. 2248-2253	340
1958, v. 28, no. 11, p. 2357-2642	370
*Zhurnal Vysshey Nervnoy Deyatel'nosti im. Pavlova (USSR)	C-5
1955, v. 5, no. 2, p. 173-186	295
Znaniye-Sila (USSR)	
1957, no. 11, p. 27-41	B-1
1959, no. 4, p. 23-26	B-2
1959, no. 4, p. 44	B-1
1959, no. 4, p. 45	B-1
1959, no. 5, p. 16-17	B-5
Zoologicheskiy Zhurnal (USSR)	
1958, v. 37, no. 10, p. 1568-1571	310
Zoologicke Listy (Czecholsovakia)	
1957, v. 20, no. 1, p. 81-83	298
der Züchfer (Germany)	
1949, v. 13, no. 8/9, p. 247-254	298

TRANSLATION NUMBER INDEX

Number	Page
59-10055	332
59-10065	347
59-10137	312
59-10139	352
59-10141	315
59-10175	320
59-10192	334
59-10207	309
59-10209	371
59-10213	315
59-10214	349
59-10228	314
59-10251	358
59-10255	343
59-10256	309
59-10264	361
59-10294	341
59-10349	301
59-10365	306
59-10381	376
59-10383	314
59-10392	296
59-10473	321
59-10500 (AEC-tr-3431)	369
59-10525	364
59-10560	372
59-10570	313
59-10585	316
59-10589	297
59-10592	313
59-10630	339
59-10661	301
59-10669	336
59-10680	317
59-10694	308
59-10697	358
59-10699	305
59-10713 (AEC-tr-3524)	301
59-10715	316
59-10718	313
59-10726	316
59-10733	353
59-10758	358
59-10786	341
59-10849	301
59-10794	353
59-10800	358
59-10830	304
59-10833	296
59-10836	305
59-10845	303
59-10852	335
59-10856	341
59-10887	370
59-10910 (AEC-tr-2701)	320
59-10918 (NP-tr-197)	322
59-10919 (NP-tr-194)	376
59-10921	294
59-10953	373
59-10954	342
59-10956	378
59-10982	367
59-10994	376
59-10995	375
59-10998	304
59-10999	304
59-11001	356
59-11002	341
59-11021	352
59-11023	341
59-11047	356
59-11060	356
59-11074	340
59-11080	355
59-11090	339
59-11169	300
59-11361	295
59-11380	325
59-11430	326
59-11460	331
59-11498	369
59-11511	339
59-11534	327
59-11540	377
59-11545	327
59-11664	308
59-11665	342
59-11669	308
59-11672	311
59-11891	329
59-11923	371
59-11957	341
59-11959	341
59-12153	346
59-13029	326
59-13064	339
59-13082	326
59-13173	325
59-13205	295
59-13258	323
59-13340	377
59-13361	292
59-13400	347
59-13424	340
59-13460	295
59-13495	307
59-13497	328
59-13519	305
59-13531	339
59-13547	376
59-13566	318
59-13567	315
59-13585	293
59-13586	293
59-13607	301
59-13609	299
59-13612	298
59-13615	309
59-13631	295
59-13649	306
59-13652	294
59-13659	306
59-13660	315
59-13669	292
59-13671	370
59-13673	311
59-13675	309
59-13690	299
59-13691	301
59-13692	299
59-13693	298
59-13695	299
59-13696	293
59-13698	295
59-13699	293
59-13700	292
59-13701	294
59-13702	299
59-13703	293
59-13712	309
59-13715	298
59-13716	292
59-13717	311
59-13718	293
59-13719	370
59-13720	293
59-13722	292
59-13723	306
59-14157	329
59-14172	345
59-14173	344
59-14174	321
59-14177	346
59-14179	352
59-14180	340
59-14183	310
59-14186	346
59-14187	355
59-14188	344
59-14274 (NASA RE 2-18-59W)	373
59-14367	376
59-14498 (ATS-51L291)	335
59-14539 (MDF G-159)	376
59-14543 (MDF G-160)	361
59-14638 (AEC-tr-3572)	294
59-14669	307
59-14670	292
59-14677	293
59-14679	293
59-14680	372

Number	Page
59-14681	359
59-14682	377
59-14736	340
59-14760	368
59-14764 (ABSTRACTS)	363
59-14777 (ATS-52L29R)	327
59-14778 (ATS-42L29R)	326
59-14780 (ATS-99L29R)	312
59-14783 (ATS-50L30R)	327
59-14792 (ATS-49L30R)	323
59-14821 (ATS-98L29J)	357
59-14829 (ATS-01L30J)	357
59-14834 (BISITS-1124)	349
59-14835 (BISITS-1125)	349
59-14840 (BISITS-1192)	312
59-14845 (BISITS-1233)	351
59-14851 (BISITS-1232)	349
59-14949 (SCL-tr-234)	320
59-15006	317
59-15007	345
59-15041	319
59-15055	337
59-15064	335
59-15066	349
59-15068	345
59-15070	344
59-15071	345
59-15091	315
59-15093	333
59-15095	363
59-15157	361
59-15177	297
59-15179	359
59-15252	324
59-15257	315
59-15267	336
59-15276	370
59-15308	373
59-15325	355
59-15329	354
59-15330	354
59-15331	355
59-15348	353
59-15360	358
59-15367	335
59-15375	318
59-15377	317
59-15380	336
59-15381	314
59-15385 (AEC-tr-2883)	340
59-15388	306
59-15393	300
59-15402	351
59-15404	300
59-15405	357
59-15407 (AEC-tr-1781)	376
59-15408	322
59-15413 (AEC-tr-1596)	321
59-15414	363
59-15420	312
59-15421	314
59-15422	296
59-15423	297
59-15424	303
59-15425	305
59-15426	307
59-15427	312
59-15429	308
59-15430	315
59-15431	303
59-15434	307
59-15437	297
59-15452	354
59-15453	305
59-15459	369
59-15461	378
59-15464	298
59-15466	351
59-15471	365
59-15472	295
59-15474	302
59-15487	374
59-15516	317
59-15527	313
59-15528	302
59-15531	303
59-15532	356
59-15535	325
59-15537	295
59-15539	303
59-15540	296
59-15541	301
59-15546	306
59-15549	306
59-15569	371
59-15575	327
59-15577	298
59-15581	357
59-15585	375
59-15599	304
59-15600	304
59-15601	304
59-15602	301
59-15604	308
59-15608	378
59-15614	323
59-15615	300
59-15616	300
59-15640	354
59-15653	335
59-15674	357
59-15677	302
59-15682	303
59-15699	327
59-15700	328
59-15708	316
59-15713	367
59-15716	308
59-15717	327
59-15718	374
59-15719	339
59-15720	365
59-15721	374
59-15723	358
59-15724	371
59-15728	375
59-15729	374
59-15731	317
59-15732	368
59-15739	303
59-15740	307
59-15741	305
59-15742	295
59-15743	302
59-15745	317
59-15746	322
59-15749	333
59-15750	363
59-15751	306
59-15752	301
59-15753	300
59-15754	300
59-15755	304
59-15756	302
59-15760	302
59-15763	320
59-15770	318
59-15772	297
59-15773	297
59-15774	297
59-15775	372
59-15778	368
59-15780	371
59-15782	348
59-15784	373
59-15785	363
59-15786	343
59-15787	319
59-15788	319
59-15789	312
59-15790	370
59-15791	336
59-15794	319
59-15801	333
59-15802	360
59-15803	354
59-15805	361
59-15815	356
59-15816	372
59-15817	299
59-15819	366
59-15820	367
59-15823	346
59-15824	346
59-15825	345
59-15826	345
59-15828	346
59-15829	378
59-15830	310
59-15838	316
59-15841	299

Number	Page
59-15843	327
59-15844	343
59-15846	348
59-15848	321
59-15849	354
59-15850	343
59-15855	303
59-15856	303
59-15857	307
59-15858	308
59-15859	305
59-15860	307
59-15865	341
59-15866	340
59-15869	328
59-15870	316
59-15871	316
59-15873	332
59-15875	357
59-15876	374
59-15878	374
59-15880	302
59-15881	305
59-15882	325
59-15886	318
59-15887	315
59-15888	332
59-15890	307
59-15894	300
59-15895	298
59-15897	299
59-15900	316
59-15901	311
59-15902	299
59-15903	298
59-15904 (AEC-tr-3276)	369
59-15906	316
59-15907	306
59-15908	321
59-15914	321
59-15917	318
59-15921	317
59-15923	323
59-15928	353
59-15937	317
59-15939	334
59-15941	317
59-15942	322
59-15946	319
59-15951	296
59-15952	298
59-15953	309
59-15955	309
59-15956	310
59-15957	310
59-15958	310
59-15959	311
59-15960	310
59-15961	309
59-15962	210
59-15963	309
59-15964	328
59-15965	309
59-15966	322
59-15969	334
59-15970	358
59-15971	303
59-15974	357
59-15975	337
59-15978	333
59-15983	336
59-15996	324
59-16011	363
59-16019	325
59-16020	324
59-16048	294
59-16049	294
59-16060	295
59-16068	366
59-16097 (RIS 96964)	335
59-16144	343
59-16148	306
59-16150	293
59-16151	292
59-16157	342
59-16199-1 (SOVIET)	291
59-16203	292
59-16204	292
59-16205	292
59-16206	308
59-16207	292
59-16219 (CEA-tr-R483)	329
59-16280	324
59-16282	324
59-16283	324
59-16328	352
59-16336	362
59-16374	333
59-16405 (Sansone)	359
59-16436	337
59-16440	356
59-16444	323
59-16446	343
59-16464	338
59-16469	369
59-16472	308
59-16477	367
59-16479	298
59-16480	337
59-16485	377
59-16524 (ATS-89L30G)	325
59-16527 (ATS-77L30J)	335
59-16531 (ATS-78L30J)	335
59-16532 (ATS-62L30J)	316
59-16533 (ATS-63L30J)	316
59-16537 (ATS-68L30G)	334
59-16538 (BISITS-1198)	348
59-16558	340
59-16598 (BISITS-1254)	320
59-16599 (BISITS-1153)	350
59-16601 (BISITS-1215)	351
59-16602 (BISITS-1197)	321
59-16605 (BISITS-1294)	337
59-16607 (BISITS-1071)	352
59-16610 (BISITS-922)	352
59-16611 (BISITS-1245)	349
59-16613 (BISITS-1230)	350
59-16614 (BISITS-1252)	350
59-16615 (BISITS-1194)	350
59-16616 (BISITS-1284)	313
59-16617 (BISITS-1163)	350
59-16618 (BISITS-1255)	321
59-16619 (BISITS-1241)	368
59-16620 (BISITS-1268)	355
59-16621 (BISITS-1250)	344
59-16623 (BISITS-1228)	351
59-16627 (BISITS-1247)	319
59-16629 (BISITS-1208)	350
59-16630 (BISITS-1266)	320
59-16631 (BISITS-1328)	351
59-16632 (BISITS-1267)	355
59-16634 (BISITS-1307)	357
59-16651	329
59-16657 (Bogolyubov)	373
59-16658 (Lifshits)	320
59-16662 (RIS-97046)	331
59-16663 (RIS-97045)	331
59-16665 (RIS-97040)	348
59-16667 (RIS-97035)	330
59-16668 (RIS-96698)	331
59-16670 (RIS-97033)	367

Number	Page
59-16671 (RIS-97024)	372
59-16672 (RIS-96996)	330
59-16674 (RIS-96987)	330
59-16677 (RIS-96889)	315
59-16681 (RIS-61009)	330
59-16682 (RIS R-770)	355
59-16775	345
59-16866	328
59-16867 (ATS-75L30G)	349
59-16870 (ATS-92L30F)	318
59-16872 (ATS-38L30G)	373
59-16876 (ATS-74L30G)	349
59-16897 (ATS-25L31DU)	313
59-16899 (ATS-87L31DU)	313
59-16906 (ATS-85L31R)	326
59-16931 (ATS-46L31R)	299
59-16941 (ATS-66L29R)	365
59-16942 (ATS-50L29R)	314
59-16954	342
59-16955	342
59-16958	378
59-16962	342
59-16967 (CCT-129-TT)	366
59-16968 (CCT-163-TT)	356
59-16969 (CCT-164-TT)	319
59-16970 (CCT-165-TT)	318
59-16975 (CCT-995-TT)	320
59-16991	344
59-16992	353
59-16993	325
59-16994	348
59-16995	353
59-18022 (NACA TM-1404)	371
59-18025 (NACA TM-1409)	371
59-18026 (NACA TM-1411)	360
59-18027 (NACA TM-1412)	346
59-18028 (NACA TM-1413)	363
59-18029 (NACA TM-1417)	362
59-18030 (NACA TM-1431)	362
59-18032 (NACA TM-1433)	362
59-18033 (NACA TM-1434)	362
59-18044 (HB-4609)	366
59-18045 (HB-4562)	364
59-18046 (HB-4561)	334
59-18047 (HB-4599)	332
59-18048 (HB-4600)	350
59-18049 (HB-4601)	332
59-18050 (HB-4602)	333
59-18051 (HB-4605)	336
59-18053 (HB-4362)	349
59-18054 (HB-4563)	368
59-18055 (HB-4443)	365
59-18056 (HB-4390)	336
59-18057 (HB-4447)	365
59-18059 (HB-4515)	362
59-18060 (HB-4450)	351
59-18061 (HB-4451)	360
59-18062 (HB-4392)	346
59-18063 (HB-4461)	368
59-18064 (HB-4595)	367
59-18065 (HB-4502)	351
59-18066 (HB-4120)	350
59-18067 (HB-4470)	348
59-18068 (HB-4594)	367
59-18069 (HB-4518)	334
59-18070 (HB-4452)	364
59-18082 (BERESNEV)	360
59-18083	347
59-18093	361
59-18094	344
59-18096	344
59-18102	360
59-18103	349
59-18110	338
59-18128	313
59-18154 (METAL)	364
59-18191 (BISITS-1279)	356
59-18192 (BISITS-1273)	361
59-18193 (BISITS-1348)	365
59-18194 (BISITS-1351)	351
59-18395	353
59-18396	344
59-18398	332
59-18399	332
59-18400	338
59-18415	342
59-18416	375
59-18417	329
59-18419	331
59-21003	369
59-21004	361
59-21006	291
59-21009	375
59-21010	321
ACSI H-0877 (59-11891)	329
ACSI H-2056B (59-11959)	341
ACSI H-2445 (59-16011)	363
ACSIL Trans-940 (59-10214)	349
ACSIL Trans-962 (59-10213)	315
ACSIL Trans-1100 (59-15007)	345
AEC-tr-1596	321
AEC-tr-1781	376
AEC-tr-2701	320
AEC-tr-2883	340
AEC-tr-3276	369
AEC-tr-3431	369
AEC-tr-3524	301
AEC-tr-3572	294
AERE Lib/Trans-802 (59-10228)	314
AF-601 856 (59-16958)	378
AF-1 092 884 (59-16954)	342
AF-1 116 915 (59-16955)	342
AF-1 141 769 (59-16416)	375
AF-1 255 503 (59-18417)	329
AF-1 255 507 (59-18419)	331
AF-1 255 600 (59-16328)	352
AF-1255 620 (59-16446)	343
AF-1 255 650 (59-16464)	338
AF-1 255 669 (59-16469)	369

Page	Number	Page
364	AF-1 255 699 (59-16472)	308
356	AF-1 255 700 (59-16444)	323
361	AF-1 255 705 (59-16436)	337
365	AF-1 255 741 (59-16477)	367
351	AF-1 255 765 (59-16440)	356
353	AF-1 255 785	
344	(59-16336)	362
332	AF-1 255 805	
332	(59-16479)	298
338	AF-1 255 807	
342	(59-16480)	337
375	AF-1 255 813	
329	(59-16485)	377
331	AF-1 255 845	
369	(59-16962	342
361	APL/JHU TG 230-T99	
291	(59-21006)	291
375	ATS-01L30J	357
321	ATS-25L31DU	313
	ATS-38L30G	373
329	ATS-42L29R	326
	ATS-46L31R	299
341	ATS-49L30R	323
	ATS-50L29R	314
363	ATS-50L30R	327
	ATS-51L29I	335
349	ATS-52L29R	327
	ATS-62L30J	316
315	ATS-63L30J	316
	ATS-66L29R	365
345	ATS-68L30G	334
321	ATS-74L30G	349
376	ATS-75L30G	349
320	ATS-77L30J	335
340	ATS-78L30J	335
369	ATS-85L31R	326
369	ATS-87L31DU	313
301	ATS-89L30G	325
294	ATS-92L30F	318
	ATS-98L29J	357
314	ATS-99L29R	312
	BISITS-922	352
378	BISITS-1071	352
	BISITS-1124	349
342	BISITS-1125	349
	BISITS-1153	350
342	BISITS-1163	350
	BISITS-1192	312
375	BISITS-1194	350
	BISITS-1197	321
329	BISITS-1198	348
	BISITS-1208	350
331	BISITS-1215	351
	BISITS-1228	351
352	BISITS-1230	350
	BISITS-1232	349
343	BISITS-1233	351
	BISITS-1241	368
338	BISITS-1245	349
	BISITS-1247	319
369	BISITS-1250	344

Number	Page
BISITS-1252	350
BISITS-1254	320
BISITS-1255	321
BISITS-1266	320
BISITS-1267	355
BISITS-1268	355
BISITS-1273	361
BISITS-1279	356
BISITS-1284	313
BISITS-1294	337
BISITS-1307	357
BISITS-1328	351
BISITS-1348	365
BISITS-1351	351
CCT-129-TT	366
CCT-163-TT	356
CCT-164-TT	319
CCT-165-TT	318
CCT-995-TT	320
CEA-tr-R483	329
CTS-320 (59-14180)	340
CTS-321 (59-16994)	348
CTS-322 (59-14177)	346
CTS-332 (59-14186)	346
CTS-333 (59-14183)	310
CTS-340 (59-14187)	355
CTS-346 (59-14174)	321
CTS-347 (59-14173)	344
CTS-348 (59-14179)	352
CTS-349 (59-14188)	344
CTS-350 (59-14172)	345
DVL-192 (59-15348)	353
F-TS-9057/V (59-18103)	349
F-TS-9082/V (59-18102)	360
F-TS-9131/V (59-18092)	344
F-TS-9175/V (59-18096)	344
F-TS-9252/V (59-16866)	328
F-TS-9289/V (59-18093)	361
F-TS-9412/III (59-16068)	366
F-TS-9504/V (59-12153)	346
F-TS-9631/V (59-16060)	295
F-TS-9691/III (59-14157)	329
F-TS-9783/III (59-16049)	294

Number	Page
F-TS-9784/III (59-16048)	294
FRBC Trans-178 (59-15960)	310
FRBC Trans-179 (59-15959)	311
FRBC Trans-180 (59-15961)	309
FRBC Trans-181 (59-15965)	309
FRBC Trans-182 (59-15953)	309
FRBC Trans-183 (59-15964)	328
FRBC Trans-190 (59-15963)	309
FRBC Trans-191 (59-15901)	311
FRBC Trans-195 (59-15962)	310
FRBC Trans-196 (59-15955)	309
FRBC Trans-197 (59-15956)	310
FRBC Trans-207 (59-15957)	310
FRBC Trans-208 (59-15958)	310
HB-4120	350
HB-4362	349
HB-4390	336
HB-4392	346
HB-4443	365
HB-4447	365
HB-4450	351
HB-4451	360
HB-4452	364
HB-4461	368
HB-4470	348
HB-4502	351
HB-4515	362
HB-4518	334
HB-4561	334
HB-4562	364
HB-4563	368
HB-4594	367
HB-4595	367
HB-4599	332
HB-4600	350
HB-4601	332
HB-4602	333
HB-4605	336
HB-4609	336
JPRS(DC)-587 (59-11460)	331
JPRS(DC)-645 (59-11498)	369
JPRS(DC)-659 (59-11511)	339
JPRS(DC)-685 (59-11534)	327
JPRS(DC)-691 (59-11540)	377
JPRS(DC)-711 (59-11545)	327

Number	Page
JPRS(DC)-773 (59-11665)	342
JPRS(DC)-781 (59-11672)	311
JPRS(DC)-L-1219 (59-11361)	295
JPRS(DC)-L-1310 (59-11380)	325
JPRS(DC)-L-1434 (59-11430)	326
JPRS(DC)-L-1729 (59-11664)	308
JPRS(DC)-L-1734 (59-11669)	308
JPRS(NY)-831 (PB 141 325T)	339
JPRS(NY)-836 (59-11074)	340
JPRS(NY)-837 (59-11090)	339
JPRS(NY)-838 (59-11023)	341
JPRS(NY)-840 (59-11021)	352
JPRS(NY)-851 (59-11080)	355
JPRS(NY)-853 (59-11047)	356
JPRS(NY)-854 (59-11060)	356
JPRS(NY)-855 (59-11001)	376
JPRS(NY)-856 (59-11002)	341
JPRS(NY)-1002 (59-13173)	325
JPRS(NY)-1006 (59-13029)	326
JPRS(NY)-1016 (59-11169	300
JPRS(NY)-1139 (59-13082)	326
JPRS(NY)-1312 (59-13258)	323
JPRS(NY)-1389 (59-13340)	327
JPRS(NY)-1414 (59-13361)	292
JPRS(NY)-1447 (59-13400)	347
JPRS(NY)-1479 (59-13424)	340
JPRS(NY)-1508 (59-13460)	295
JPRS(NY)-1614 (59-13547)	376
JPRS(NY)-1636 (59-13566)	318
JPRS(NY)-1750 (59-13699)	293
JPRS(NY)-1751 (59-13700)	292
JPRS(NY)-1752 (59-13701)	294
JPRS(NY)-1637 (59-13567)	315
JPRS(NY)-1657 (59-13585)	293
JPRS(NY)-1658 (59-13586)	293
JPRS(NY)-1679 (59-13607)	301
JPRS(NY)-1681 (59-13609)	299
JPRS(NY)-1684 (59-13612)	298
JPRS(NY)-1686 (59-13615)	309
JPRS(NY)-1699 (59-13631)	295
JPRS(NY)-1704 (59-13649)	306
JPRS(NY)-1713 (59-13652)	294
JPRS(NY)-1717 (59-13659)	306
JPRS(NY)-1718 (59-13660)	315
JPRS(NY)-1729 (59-13669)	292
JPRS(NY)-1731 (59-13671)	370
JPRS(NY)-1733 (59-13673)	311
JPRS(NY)-1735 (59-13675)	309
JPRS(NY)-1737 (59-13690)	299
JPRS(NY)-1738 (59-13691)	301
JPRS(NY)-1739 (59-13692)	299
JPRS(NY)-1742 (59-13693)	298
JPRS(NY)-1746 (59-13695)	299
JPRS(NY)-1747 (59-13696)	293
JPRS(NY)-1749 (59-13698)	295
JPRS(NY)-1753 (59-13702)	299
JPRS(NY)-1754 (59-13703)	293
JPRS(NY)-1759 (59-13712)	309
JPRS(NY)-1763 (59-13715)	298
JPRS(NY)-1764 (59-13716)	292
JPRS(NY)-1765 (59-13717)	311
JPRS(NY)-1766 (59-13718)	293
JPRS(NY)-1771 (59-13719)	370
JPRS(NY)-1772 (59-13720)	293
JPRS(NY)-1774 (59-13722)	292
JPRS(NY)-1775 (59-13723)	306
JPRS(NY)-L-313 (PB 141 179T)	326
JPRS(NY)-L-502 (59-13064)	339
JPRS(NY)-L-646 (59-13205)	295
JPRS(NY)-L-662 (59-13495)	307
JPRS(NY)-L-774 (59-13497)	328
JPRS(NY)-L-782 (59-13519)	305
JPRS(NY)-L-788 (59-13531)	339
LL qd-3804 (59-14682)	377
LL qd-3805 (59-14681)	359
LL-TP-29 (59-14736)	340
LL-TP-30 (59-16558)	340
LL-TS-42 (59-14680)	372
MDF G-159	376
MDF G-160	361
NACA TM-1404	371
NACA TM-1409	371
NACA TM-1411	360
NACA TM-1412	346
NACA TM-1413	363
NACA TM-1417	362
NACA TM-1431	362
NACA TM-1433	362
NACA TM-1434	362
NAMRU Trans-1 (59-15817)	299
NAMRU Trans-4 (59-15903)	298
NAMRU Trans-6 (59-15897)	299
NAMRU Trans-7 (59-15895)	298
NAMRU Trans-8 (59-15841)	299
NAMRU Trans-15 (59-15902)	299
NASA RE 2-18-59W	373
NBS 5530 (59-10560)	372
NP-tr-75 (59-14760)	368
NP-tr-194	376
NP-tr-197	322
NRL Trans-711 (59-11923)	371
NRL Trans-722 (59-11957)	341
NRL Trans-723 (59-21003)	369
NRL Trans-726 (59-21004)	361
NRL Trans-727 (59-21010)	321
PB 131 891T-24	377
PB 131 891T-25	377

Number	Page
PB 141 001T-10	325
PB 141 001T-11	325
PB 141 001T-12	325
PB 141 002T-8	326
PB 141 002T-9	326
PB 141 005T-13	326
PB 141 005T-14	326
PB 141 007T-5	325
PB 141 007T-6	325
PB 141 014T-3	347
PB 141 015T-21	377
PB 141 015T-22	377
PB 141 015T-23	377
PB 141 015T-24	377
PB 141 015T-25	377
PB 141 016T-11	377
PB 141 017T-2	369
PB 141 019T-7	377
PB 141 019T-8	377
PB 141 020T-13	377
PB 141 022T-10	295
PB 141 024T-10	329
PB 141 027T-15	364
PB 141 027T-16	364
PB 141 031T-7	359
PB 141 031T-8	359
PB 141 033T-14	359
PB 141 033T-15	359
PB 141 034T-7	359
PB 141 035T-4	359
PB 141 036T-7	359
PB 141 037T-4	359
PB 141 040T-6	370
PB 141 041T-11	369
PB 141 041T-12	369
PB 141 042T-11	323
PB 141 045T-13	324
PB 141 047T-14	372
PB 141 047T-15	372
PB 141 047T-16	372
PB 141 048T-4	359
PB 141 049T-13	375
PB 141 049T-14	375
PB 141 051T-1	370
PB 141 051T-2	370
PB 141 051T-3	370
PB 141 051T-4	370
PB 141 051T-5	370
PB 141 052T-11	370
PB 141 052T-12	370
PB 141 052T-13	370
PB 141 052T-14	370
PB 141 053T-13	370
PB 141 055T-14	311
PB 141 055T-15	311
PB 141 055T-16	311
PB 141 056T-5	330
PB 141 062T-6	330
PB 141 062T-7	330
PB 141 063T-14	364
PB 141 064T-6	318
PB 141 065T-6	372
PB 141 066T-4	330
PB 141 068T-12	354
PB 141 070T-13	312
PB 141 071T-7	312
PB 141 072T-13	319
PB 141 072T-14	319
PB 141 073T-6	353
PB 141 075T-14	312
PB 141 084T-15	341
PB 141 087T-9	338
PB 141 089T-13	342
PB 141 089T-14	342
PB 141 091T-14	337
PB 141 091T-15	337
PB 141 092T-10	291
PB 141 092T-11	291
PB 141 094T-6	337
PB 141 096T-12	337
PB 141 098T-11	337
PB 141 099T-10	338
PB 141 099T-11	338
PB 141 104T-11	338
PB 141 104T-12	338
PB 141 106T-12	338
PB 141 106T-13	338
PB 141 107T-11	339
PB 141 108T-14	339
PB 141 108T-15	339
PB 141 109T-3	338
PB 141 110T-13	352
PB 141 112T-7	377
PB 141 116T-11	347
PB 141 116T-12	347
PB 141 117T-12	347
PB 141 119T-12	347
PB 141 119T-13	347
PB 141 119T-14	347
PB 141 122T-6	347
PB 141 122T-7	347
PB 141 124T-13	360
PB 141 124T-14	360
PB 141 125T-13	347
PB 141 126T-7	364
PB 141 133T-4	364
PB 141 134T-13	354
PB 141 134T-14	354
PB 141 134T-15	354
PB 141 135T-12	329
PB 141 136T-14	365
PB 141 138T-15	347
PB 141 139T-13	367
PB 141 140T-14	364
PB 141 179T	326
PB 141 325T	339
PB 141 401T-3	329
RAE Trans-751 (59-10055)	332
RAE Trans-759 (59-10065)	347
RAE Trans-774 (59-10137)	312
RAE Trans-777 (59-10294)	341
RIS-61009	330
RIS-96698	331
RIS-96889	315
RIS-96964	335
RIS-96987	330
RIS-96996	330
RIS-97024	372
RIS-97033	367
RIS-97035	330
RIS-97040	348
RIS-97045	331
RIS-97046	331
RIS R-770	355
RPI Math Trans-1 (59-14367)	376
RTS-1044 (59-18128)	313
SCL-tr-234	328
TG 230-T57 (59-21009)	375
UCRL Trans-373 (59-10381)	376
UCRL Trans-374 (59-10392)	296

☆ U.S. GOVERNMENT PRINTING OFFICE: 1959 O - 521848 (4)